

# A Cry for Health

Poverty and Disability in the Third World

Edited by Oliver Shirley



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FOREWORD by JONATHAN DIMBLEBY



## **THE THIRD WORLD GROUP FOR DISABLED PEOPLE**

The Third World Group for Disabled People was established in 1981 as part of the International Year of Disabled People. Now a charitable organisation in its own right, the Group concentrates on information work, including conferences seminars and books, and organises training courses in appropriate techniques for staff from other agencies. The Group is particularly anxious that the problems of disabled people should be seen in the overall context of wider development concerns such as health and nutrition.

*For further information write to:—*

**The Third World Group for Disabled People  
16 Bath Street  
Frome  
Somerset BA11 1DN  
Telephone: Frome (0373) 67006**



COMMUNITY HEALTH CELL

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Poverty and Disability in the Third World

Edited by Oliver Shirley

The Third World Group for Disabled People  
The Appropriate Health Resources and Technologies Action Group

*I should like to express my thanks to the contributors to this book and to all those who have helped with its publication, in particular Mary Manning and Elinor Harbridge.*

Oliver Shirley. May 1983

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# Foreword

Every parent must surely know that sudden surge of irrational panic: will my child be born damaged or crippled in infancy? In the rich countries of the North, the risk of such tragedy is mercifully slight and growing slighter. We have eradicated the most prevalent causes of handicap and we are at last learning to care more appropriately for the victims so that they can live as normally as their will and ingenuity permit.

In the countries of the South, that we call the Third World, there is no sudden panic but endless—and quite rational—fear. The infant mortality figures—those chill statistics with which we distance ourselves from the tiny wooden coffins and the weeping parents that shuffle dismally to the cemetery day after day in thousands of villages all over Asia, Africa and Latin America—are an extreme testament to the persistent and worsening tragedy that is the subject of this book.

Although it is almost beyond the imagination to grasp the fact, we know that no less than one out of every ten people in the Third World is handicapped or disabled. That is over three hundred million people, more than the entire population of Western Europe. Nor is it chance that the figures are so horrendous. Those familiar evils—malnutrition, filthy water, no sanitation, a trinity which succours disease and epidemic—combine to murder thousands of children every day and permanently cripple the minds and bodies of tens of thousands more.

The fundamental cause of this plague is equally familiar: poverty. And because it is poverty—acute, absolute, devastating poverty—and not the whim of some arbitrary and avenging God, it is not beyond our control. As we know from our own experience in the North, poverty is a disease that is susceptible to treatment. Its severity can be moderated, its incidence reduced until eventually, at least in the acute form, it can be eradicated. It is possible to provide everyone with clean water (for the price of a few missiles); it is possible to grow food and to distribute it fairly, to build proper sewerage systems, offer basic health care, and stamp out disease. We can do it—and yet it is not done, because there is not the will. Not yet.

If we are to reverse the trend towards even more dreadful levels of disability in the Third World then many more of us, in the North and the South, have got to realise what must be done and that we can help do it. If public opinion can unite across the world against the criminal folly of the arms race, then, suitably informed, it can speak out also against the obscenity that we politely call 'disability in the Third World'.

**Jonathan Dimbleby**





Photograph by Carolyn Watson (UNICEF)

*Poverty causes disability. This two-year-old child, weakened by malnutrition, is particularly at risk from disabling diseases transmitted in contaminated water. (Senegal)*



# Introduction

## Poverty and Disability in the Third World: The Crippling Effects of Underdevelopment

by Lesley Doyal

*Senior Lecturer in Sociology, Polytechnic of North London*

Discussions about the health problems facing Third World populations usually concentrate on acute illness and premature death. This is not surprising, given the vast and highly visible toll of mortality and disease found in most underdeveloped countries. However it is important also to recognize the plight of the 'survivors'—that majority of the poor who do not die in childhood but live out their lives in a state of chronic debility, never reaching what we in the industrialized world would regard as a 'normal' state of health. Of course there is a sense in which *all* of these people are 'disabled' by their lack of health. However we will be concentrating here on the most severely disabled—on those people whose degree of impairment sets them apart and limits their participation in normal social and economic life.

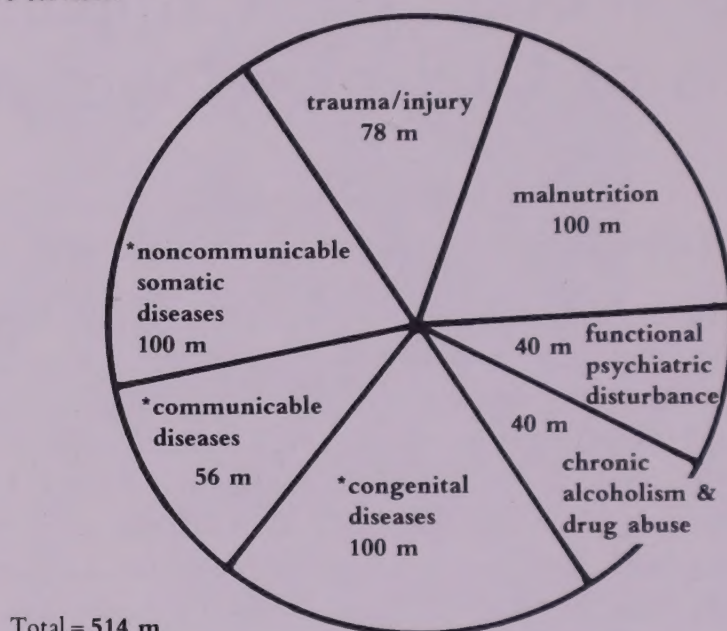
Informed estimates suggest that something like one in ten of the population in most Third World countries is handicapped or disabled in some way.<sup>1</sup> Viewed on a global scale, this amounts to about 340 million people. While inevitably an underestimate, this still means that there are about 8 million disabled people in Bangladesh and Nigeria, 12 million in Brazil, 14 million in Indonesia and as many as 64 million in India. Little success has so far been achieved in improving the lot of those people but the *International Year of Disabled People*, in 1981, was designed to focus attention on their plight and hopefully to marshal resources to enable them to help themselves. In order to see how this goal can best be achieved we need to start by understanding how these disabilities are caused.

The single most salient fact to recognize is the very close connection that exists between poverty and disability in the Third World. Not only does disability usually guarantee the poverty of the victim but, most importantly, poverty is itself a major *cause* of disability.<sup>2</sup> In poor countries many families do not have any land on which to grow food and do not earn enough to purchase the most basic necessities for health. As a result they frequently become ill—often with a potentially disabling disease. Their problems are then compounded by the fact



## DISABILITY: THE GLOBAL PICTURE

Rehabilitation International estimates that the world population of disabled people is around 500 million. Over two thirds of these people live in developing countries, mostly without any rehabilitative services.



### World Incidence of Disability (in millions)

- ★ **congenital diseases**—diseases existing at, and usually before, birth; may have a hereditary or non-hereditary cause; includes mental retardation.
- ★ **non-communicable somatic diseases**—eg: back disorders, heart conditions, epilepsy, arthritis etc. (somatic = of, or affecting, the body.)
- ★ **communicable diseases**—diseases which can be carried from one person to another, either directly or indirectly; particularly associated with deprived social environment and insanitary conditions. The main disabling communicable diseases include: polio, trachoma (often causes blindness), onchocerciasis (river blindness) and leprosy.

Note: for further information see WHO document SHS/75.1, *WHO Policy and Programme for Disability Prevention and Rehabilitation*, and Cruikshank, Standard, Russell, *Epidemiology and Community Health in Warm Climate Countries* Churchill Livingstone 1976.

that collective resources are not available to provide the medical and social services which they are unable to purchase for themselves. Indeed the lack of simple devices such as spectacles or hearing aids may turn a remediable impairment into a permanent disability. Thus it is poor people who are most likely to develop disabilities and least likely to get help with the problems this may cause.



A lack of resources at both community and individual level means that most families do not have even minimally adequate living conditions. That is to say, they lack satisfactory housing, a regular supply of clean water and effective sanitation. As a result, they are susceptible to all those infectious diseases that may eventually lead to physical or psychological impairment and disability. Trachoma, for instance, is probably the most widespread infectious disease in the world. It currently affects some 500 million people, causing varying degrees of blindness. Flies, lack of clean water, inadequate sanitation and overcrowding all contribute to its spread. Polio is also a faecally-related disease. It still causes severe disability throughout the Third World and in several countries its incidence is now said to be rising. Finally bilharzia, or schistosomiasis, is a debilitating disease affecting some 850 million people. Since it is contracted through the victim entering snail-infested water, it is particularly common in areas without effective sanitation.

Poor people are also unable to obtain enough food, and dietary deficiencies can lead to specific disabilities. Lack of Vitamin A for instance, causes many thousands of poor people to go blind. In India, some 15,000 children lose their sight every year because their families have no land on which to grow vegetables and no money with which to buy them.<sup>3</sup> However the major problem for the world's poor is not specific dietary deficiencies of this kind, but a basic lack of sustenance. Many people in the Third World simply do not get enough to eat.<sup>4</sup> Mothers often cannot afford to eat enough during pregnancy, their husbands and children frequently getting preferential treatment in the distribution of what little food is available. As a result the mother's own health will gradually deteriorate and her baby is more likely to be born with physical or mental disabilities. Moreover children and adults who have never been adequately nourished are likely to suffer from chronic ill-health and debility. This lowers their resistance to infectious diseases and renders them more liable to the physical or psychological impairment such diseases can impose.

It should be clear, then, that the traditional 'diseases of poverty' that have plagued Third World populations since the beginning of the colonial era, continue to be a major cause of disability.<sup>5</sup> But it is important also to recognize that new hazards are now emerging which threaten to make the burden of disability borne by the world's poor still heavier. These new hazards are occurring because the kind of development now taking place in many Third World countries is one that exposes people to the disadvantages of industrialization without necessarily providing them with the improved standard of living that eventually followed the industrial revolution in the developed countries. We can see the effects of these developments in many areas of social and economic life, but perhaps the most obvious are the new work hazards to which Third

World people are increasingly subjected.

Obviously we have to be careful in criticizing the creation of employment opportunities in poor countries because hungry people are desperate for work. However most of these jobs are very badly paid and many are also hazardous to health. This is because they are located within industries that have been moved from Europe or the United States in order to escape the impact of occupational health and safety legislation and the regulation of environmental pollution.<sup>6</sup> The most notorious of these industries are probably those connected with the processing of asbestos, but various sectors of the chemical industry have also been prominent in this 'flight' to the Third World. Like their predecessors in colonial mines and labour compounds, many workers in these new factories have been injured or killed. In Brazil, for instance, it has been estimated that there are more than 5,000 industrial accidents each day, affecting some 8 per cent of registered workers every year.<sup>7</sup> But these new processes also expose both workers and surrounding communities to highly toxic chemicals, some of which are known to cause not just potentially fatal illnesses such as cancer, but also genetic defects in unborn children. Problems of this kind are particularly serious in the case of chemical pesticides. Potent substances such as aldrin/dieldrin, DDT, heptachlor and chlordane are all widely used in the Third World, with almost no control or supervision. As a result, peasants and their families are frequently exposed to new and serious hazards of which most of them are entirely unaware.<sup>8</sup>

Another consequence of this type of development is that many people are now moving into the urban areas in search of work. This means they are put at risk by the unhealthy conditions of overcrowded and insanitary 'shanty towns'. The current World Health Organization (WHO) assessment is that only about one third of the urban population of underdeveloped countries have water-borne sewerage and another third have no sanitation at all. WHO has also estimated that the population without sewage disposal will double over the next ten years, leading to an inevitable increase in the incidence of faecally-transmitted disease.<sup>9</sup> These urban migrants are also forced, for the first time, to buy most of their food on the open market, since they no longer have access to the land. Yet much of the food available for purchase is highly refined and poor people are encouraged by advertising to spend their small budgets on western-style foods that are high in refined carbohydrates and low in nutritional value. This often produces a diet low in vitamins, proteins and minerals and an excessive level of starch consumption, leading to new forms of malnutrition.<sup>10</sup> Similar pressures from advertisers have also led to a great increase in cigarette smoking (especially the high tar varieties) thus exposing Third World populations to all the additional disease and disability known to be associated with tobacco smoking in the industrialized world.<sup>11</sup>



Unless decisive action is taken, this combination of 'old' and 'new' threats to the health of the poor will inevitably lead to an increase in the already high incidence of impairment and handicap. Indeed WHO has estimated that over the next few years there will be an *annual increase* of about 3 million disabled people. This should lead us to ask two very important questions—first, how can we more effectively help those who are already in need, and second, how can we prevent more people from becoming disabled?

Currently most help for the disabled in the Third World comes through professional medical channels, whether it is financed by government agencies, by international aid or by indigenous or foreign charities. As a result, the emphasis has been on a curative, technological approach with most of the available facilities being concentrated in the towns.<sup>12</sup> However in recent years there has been growing criticism of this pattern of allocating medical resources. In Tanzania, for instance, barely 7 per cent of the population live in the urban areas where about half of all hospital beds and 60 per cent of all doctors are to be found. Similarly it has been estimated that in Ghana no more than 20 per cent of the population has reasonable access to health services, while in India the rural areas contain about 80 per cent of the population but only about one third of the country's doctors. Clearly this pattern of health care benefits the urban elite while also meeting the career expectations of western-trained doctors and the economic needs of multinational drug companies and medical equipment manufacturers. However it does not meet the health needs of the majority of the people and for the disabled, in particular, this high technology curative bias has often meant severe neglect. Even where services have been provided for the disabled they have often been in institutions, meaning that treatment is inevitably confined to a minute proportion of those in need. Moreover such care has usually separated people with disabilities from their families and been of little value in enabling them to realize their true potential.

Most of the articles in this volume describe how services can be provided so as to meet the needs of people with disabilities in more appropriate and effective ways. Their main emphasis is on the decentralization and deprofessionalization of care. Thus they advocate the designing of new and simpler devices that are of genuine value to the handicapped and the training of local health workers to help in education and rehabilitation at village level. But above all they stress the need to obtain the active involvement of both the person with the disability and his or her network of family and kin. With a little help it is usually they who can come up with the best strategy for integrating the disabled person into the wider society, making the best use of whatever skills and talents he or she may have. In this way more needy people can be helped and, most importantly, both people with disabilities and those around them can learn a different attitude towards

### THE DISABILITY SYNDROME

A physical or mental impairment need not incapacitate a person from becoming a full member of society, provided that the right kind of attention is given to his or her special needs. It is important, therefore, to clarify the concepts of 'impairment', 'disability' and 'handicap' and to understand that when a condition is neglected, there is a relentless escalation from impairment, through disability to handicap.

- Impairment** — a missing or defective body part, paralysis, diabetes, mental retardation, nearsightedness, etc.
- Disability** — difficulty in seeing, speaking, hearing, writing, walking, conceptualizing or any other function within the range considered normal for a human being.
- Handicap** — a disability which has interfered with the development of a person's capability to do what is normally expected at a certain age.

Note: This classification is approved by WHO and described more fully in UNICEF document E/ICEF/L.1410 *Childhood Disability: Its Prevention and Rehabilitation*.

handicap.

As the contents of this volume show, experimental schemes of this kind are now being introduced in many Third World countries. The problem, however, is how to turn these exciting but small-scale projects into routine services, and we should not underestimate the difficulties this will entail. In the first place it will not be easy to transform traditional attitudes towards disability which, in many countries, mean that sufferers are relegated to the lowliest position in what is already a deprived society. Such attitudes are, of course, understandable in a situation where everybody's labour is essential if the family is to survive, but they can be changed if emphasis is placed on what the person with disabilities *can* contribute—given a little help. But, more significantly, it will mean challenging much of western medical orthodoxy about how the sick in general, and the disabled in particular, should be treated. This will involve a reappraisal of resource allocation, a change in the doctor's relationship with his or her patient and some fundamental questioning of what western medicine actually has to offer. It will also mean trying to persuade multinational drug companies to reorientate their marketing and research activities in the Third World so as to promote prevention (by means of cheaper and more effective vaccines for instance) instead of selling temporary 'cures' to people who can ill afford them.

However the most important—and certainly the most difficult—task we face is not how to give help to those who already have disabilities, but how to prevent many of those handicaps from developing in the future. It is significant that we *do know* how a great deal of disability could be prevented. The elimination of malnutrition alone would probably reduce the total by 100 million, while



improving living and working conditions and effective water and sanitation facilities would prevent a great deal more. Thus in the same way that public health measures and an improved standard of living led to a dramatic amelioration in the health of the population of late Victorian Britain, so more food and a healthier environment could reduce disability and improve general health among Third World populations. In addition, of course, we now have the ability to eliminate—or at least to lessen the severity of—a number of potentially crippling diseases by properly organized and funded programmes of vaccination.<sup>13</sup> So we do know what needs to be done. The problem, however, is how to bring these changes about—how to eliminate poverty and ensure that people have the resources to lead useful and healthy lives.

The obstacles to the achievement of these goals are enormous, and they are to be found not in the ability or attitudes of poor people themselves but in the social and economic structure of their countries and in the world economic system of which these countries are still a part. In most parts of the Third World land, income and power are all very unevenly distributed and tradition, economic self-interest and often military strength provide formidable barriers to change. In India, for instance, the caste system means that poor people stay poor and have no land on which to grow food, while in many parts of Latin America the system of land ownership means that a tenant can easily be evicted without compensation and without alternative means of subsistence. A lack of democracy characterizes the political systems of many Third World countries, so that land reform or significantly higher levels of spending on health and social services have so far proved extremely difficult to achieve.

At the same time, most underdeveloped countries are locked into a world economic system that maintains itself by using their raw materials and their abundant supplies of cheap labour. Utilizing their monopoly power, western companies invest selectively in the Third World, then take most of the profits back to their home countries, leaving few resources to put into much-needed economic and social development. In this way the poverty and dependence of Third World countries is perpetuated and disease and disability continue to be the lot of the poor.<sup>14</sup>

So how can we, in the industrialized world, contribute to the task of fighting this poverty and inequality? Of course in the final analysis it can only be the people of the Third World themselves who achieve the necessary economic and political change. In the meantime we can help their struggles in two important ways. First we can make such resources as we have available to them, and second we can campaign to change the policies of those western governments, international organizations and private companies whose activities perpetuate the present situation.<sup>15</sup> As we have seen in the case of disability, this

means the provision of skills, knowledge and services that meet the real needs of people with disabilities. In particular it means offering those resources in such a way that the recipients do not feel inadequate or patronized, and using the situation to build up feelings of individual and collective confidence. But above all it means campaigning against government or corporate policies that support repressive regimes or direct aid towards the elite rather than the needy. It means a critical appraisal of the services currently provided for the disabled in the Third World—from whatever source—and the publicizing of any inadequacies. Finally, and very importantly, it involves a detailed monitoring of the activities of British and multinational companies and vigorous campaigning against any activities that threaten the health and wellbeing of either workers or consumers in the Third World. In this way we can hope not only to reduce the suffering caused by disability and handicap but also to help in the elimination of poverty and the creation of more equal societies throughout the world.

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- <sup>3</sup> 'Foresight prevents blindness', *British Medical Journal*, 3 April 1976.
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- <sup>7</sup> Moyes *op. cit.* p. 5.
- <sup>8</sup> D. Bull, *A Growing Problem: Pesticides and the Third World Poor*, Oxfam, 1982.
- <sup>9</sup> R. Feachem, 'Appropriate Sanitation', *New Scientist*, 8 January 1976.
- <sup>10</sup> The most notorious example of what has been called 'commerciogenic malnutrition' is of course, the promotion of baby foods in underdeveloped countries. See A. Chetley, *The Baby Killer Scandal: A War on Want Investigation into the Promotion and Sale of Powdered Baby Milks in the Third World*, War on Want, 1979.  
See also, C. Medawar, *Insult or Injury? The Marketing and Advertising of British Food and Drug Products in the Third World*, Social Audit, 1979.
- <sup>11</sup> M. Muller, *Tobacco and the Third World: Tomorrow's Epidemic*, War on Want, 1978.
- <sup>12</sup> For a detailed discussion of the export of western medicine to the Third World see L. Doyal *op. cit.* ch. 7.
- <sup>13</sup> Polio provides the best example of such potential.
- <sup>14</sup> For a succinct summary of how this is brought about see T. Hayter, *The Creation of World Poverty: An Alternative View to the Brandt Report*, Pluto Press, 1981.
- <sup>15</sup> For a discussion of how people in the west can help the struggles of those in the Third World see R. Heatley, *Poverty and Power: The Case for a Political Approach to Development and its Implications for Action in the West*, Zed Press, 1979.



# 1. Nutrition and the Prevention of Disability

**by G. J. Ebrahim**

*Reader in Tropical Child Health, University of London*

Disability occurs when a person fails to compensate for some physical or mental impairment caused by disorder, disease or injury. This failure to compensate leads to functional limitations which restrict the person's activity and cause social handicaps. There are often emotional and psychological problems as well.

Reliable information on the prevalence of disability among children is not available even in economically advanced societies. It is estimated that in the developed world one child in ten suffers from a disability involving motor, sensory or mental function. The prevalence is likely to be higher in developing countries, where the majority of the world's children live and where under-nutrition is a major contributory factor.

Growth and development are the fundamental biological processes which characterize childhood. Physical growth is not an even process: there are periods of accelerated growth, for example in adolescence and when the child is in the womb. During the first two months of intrauterine life the individual increases 240 times in length and one million times in weight!

Different body organs grow at different times. In foetal life the organ undergoing maximum growth is the brain. Total brain cell increase continues well into the second year, and further developments such as myelination (the formation of the protective myelin covering of nerves) continue into the third or even fourth year of postnatal life. Inadequate foetal growth—recognizable as low birth weight—is regarded as a major hazard, because this implies immaturity of the brain and nervous system as well as of other body systems.

In affluent western societies between five and seven per cent of all newborn babies have a low birth weight (less than 2½ kg or 5½ lb). About two-thirds of these are born prematurely and the remainder are small because they have not grown sufficiently in the womb. The incidence of cerebral palsy and other disabilities is comparatively higher among these infants.

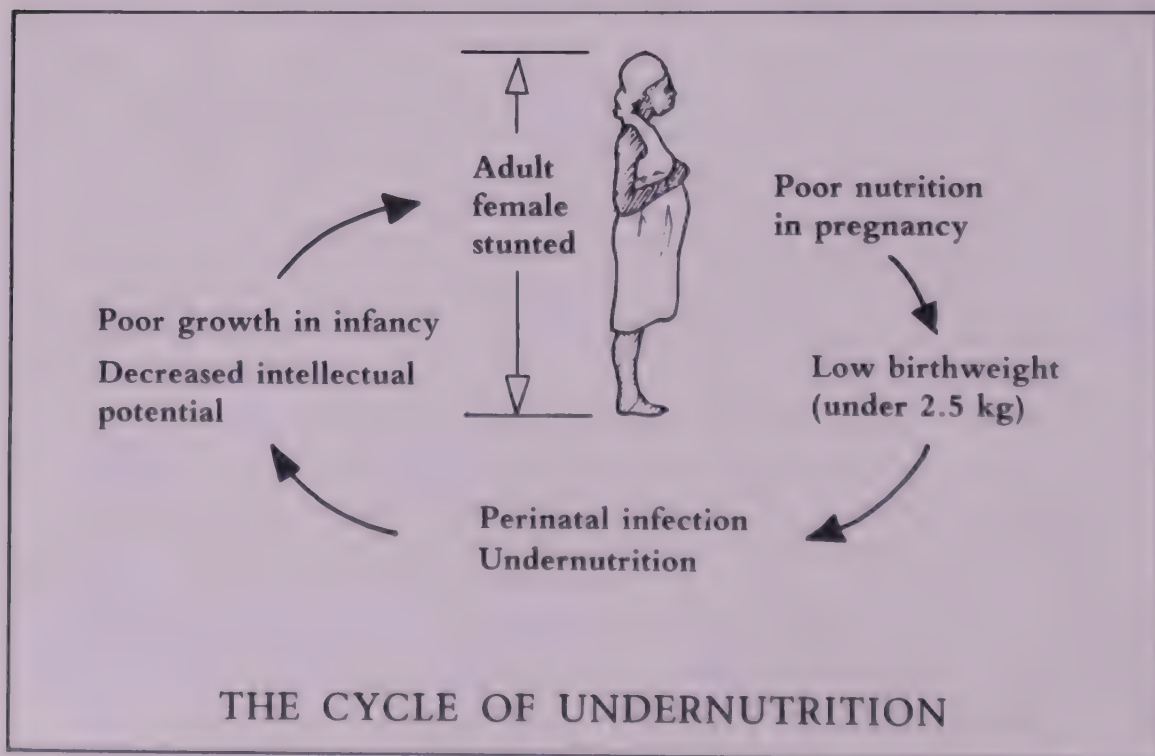
On a global scale it is estimated that 22 million infants are born annually with

a birth weight below 2½ kg. Of these, 21 million are in the developing world. In some countries up to 30 per cent of all newborn babies have a low birth weight. Though there are no national statistics on the incidence of disabilities among these children, small-scale studies show that the risks of disability are as high—if not higher—in developing countries as in more affluent societies.

The most important factor responsible for this high incidence of foetal growth retardation relates to the physiology of the mother, especially reproductive physiology at the commencement of pregnancy. Several studies provide evidence of a relationship between adult size, reproductive efficiency and socio-economic status. In terms of the baby's well-being the crucial determinants are maternal height and weight, body reserves and the physiological capacity to carry a baby through a pregnancy of adequate duration.

In the developing world the average adult female is much shorter and lighter than her counterpart in more affluent countries. Chronic undernutrition in early childhood is responsible for much of this stunting. For example, the average woman in Guatemala has a height of 143 cm (4 ft 7 in) compared to 164 cm (5 ft 3½ in) in the United Kingdom and the United States.

Apart from her pre-pregnancy health status, the mother's health and nutrition during pregnancy have a bearing on foetal growth. In affluent societies the average pregnant woman is between 12-14 kg heavier by the end of pregnancy. By comparison, in developing countries the average weight gain in pregnancy is





5-6 kg. Up to 30 per cent of women fail to gain any weight, and some even lose weight during pregnancy.

Once the baby is born, its mother's milk is the single most important factor relating to its survival, especially in the developing world. Yet there has been a serious decline in the practice of breast feeding over the last decade. The World Health Organization estimates that about one million babies die every year as a result of bottle feeding. The risk is especially acute in the mushrooming cities of the Third World.

The dangers of bottle feeding in this context are threefold: infection, introduced via the bottle (which cannot be cleaned and sterilized without a clean water supply); dilution of feeds to make the can of milk powder last longer for economic reasons, resulting in the baby being under-nourished; denial of the protective antibodies in the mother's milk, which are designed to guard the baby against infection.

Because of their concern about the increasing incidence of undernutrition and diarrhoea among infants, especially in urban squatter settlements, international welfare agencies have drawn attention to the risks implicit in the high-pressure promotion of formula baby foods. But in a world-wide industry with annual sales of US \$2 billion, ethical codes of promotion may need to be strengthened by strict government regulations to protect infant life.

Malnutrition is the most widespread and pernicious problem affecting child development in the Third World. At any given time 100 million children are suffering from malnutrition and between 10 and 25 per cent from the most severe forms. The worst form is blinding malnutrition, thought to be due to vitamin A deficiency, which blinds an estimated 200,000 children each year. Several studies have shown that childhood malnutrition causes learning disability and that the long-term effects can include physical stunting, poor intellect and difficulties in social adaptation.

There are two developments which raise hopes for the future. One is the recognition of the importance of energy (as opposed to protein) in nutrition. Improving energy density\* by adding edible oils and fats to traditional diets is one way of ensuring an adequate intake. The other important development is the recognition that diet is not the only factor determining a person's nutritional status. The illnesses from which he or she has suffered, and their effect on health and well-being, are also relevant. Measles, whooping cough, poliomyelitis and diarrhoeal diseases are all severe illnesses. Their contribution to the etiology† of malnutrition is only now being recognised.

\* The amount of energy in a given volume of food.

† Study of the causes of a disease.

Experience in Cuba, China, Tanzania and other countries shows that, with national will, it is possible for developing nations to feed their children adequately. This has been achieved by creating community-related programmes of comprehensive care. The two basic service programmes in Mother and Child Health are the Antenatal and the Under Fives' Clinics with emphasis on health surveillance, education, immunization, child-spacing and the early detection of those at risk. The key issue here is of coverage. Unless 80 per cent or more of the population are regularly covered by these services the benefits will be marginal. Secondly, these services need to be slanted towards the disadvantaged and towards those who feel unwanted or have become socially alienated. It is here that the major challenges lie. It is in these groups that illness and disabilities are likely to arise.

Amongst all the surveillance and promotive programmes for large communities, the Mother and Child Health services are best suited to become family and community based and to establish their roots in the social and cultural milieu of the community. It is only through such a base that the Mother and Child Health services can begin to grapple with the so-called clustering phenomenon wherein disease, malnutrition and disability tend to cluster in certain groups and families, adding to their social disadvantage. In the developing world, as elsewhere, the person with a disability is at the greatest risk of disadvantage. Without supportive programmes the slow drift to the bottom of the pile is inevitable. The disabled constitute a large proportion of the world's poor. Mother and Child Health services with a purely clinical approach will not get to the roots of these problems. What is needed is a new breed of health workers with the ability to identify and reach out to the disadvantaged in the community, to seek out and prevent disease and malnutrition, and with the resourcefulness to prevent these from causing disabilities.

## THE WHO EXPANDED PROGRAMME ON IMMUNIZATION

The World Health Organization's Expanded Programme on Immunization (EPI) aims to provide immunizations against six major killers of children in the developing world: diphtheria, whooping cough, tetanus, measles, poliomyelitis and tuberculosis. Each year these diseases are estimated to kill some five million children and to disable five million more. The EPI, which now has the support of more than one hundred developing countries, provides management training for vaccination schemes and supplies vaccines plus the equipment to ship, store and administer them in national programmes.



## 2. Diarrhoea and Oral Rehydration Therapy

**by Denise Ayres**

*Executive Editor, 'Diarrhoea Dialogue'\**

Dehydration from diarrhoea kills over four million children each year in developing countries. Much of this illness is not only treatable but largely preventable.

Diarrhoea has diminished in the western world through public health measures which ensure more and safer drinking water, better sanitation and improved food handling. Education has brought greater awareness of the dangers of poor hygiene—both personal and environmental. Such benefits have yet to reach many parts of the world.

In the long term, diarrhoeal disease control programmes, which improve the quantity and quality of water supplies, excreta disposal and hygiene, are the only measures that will stop children being regularly reinfected. However, these measures take time to implement and to be accepted by communities. In the short term there is a relatively easy and effective treatment for dehydration—oral rehydration therapy—which has already saved thousands of lives.

### **A simple treatment**

Dehydration from diarrhoea can kill a child within hours unless the vital body salts, sugars and fluids lost are replaced. Until relatively recently the most common method of rehydration was by intravenous transfusion. This is costly and involves the use of hospital facilities. In the Bangladeshi refugee camps during the early 1970's cholera and other diarrhoeal diseases were a major problem. Obviously there were no facilities for intravenous therapy, so fluids were given by mouth, and this method—oral rehydration therapy—was found to be very effective. Since that time various groups and organizations, especially the Diarrhoeal Disease Control Programme of the World Health Organization, have

\* 'Diarrhoea Dialogue' is published quarterly by the Appropriate Health Resources and Technologies Action Group (AHRTAG).



Photograph by Dr William Cutting

*A mother giving oral rehydration solution to her baby, using a cup and spoon.  
(Afghanistan)*



been vigorously promoting the use of early oral rehydration therapy as a life-saver for children with diarrhoea.

### **Traditional attitudes to diarrhoea**

The treatment sounds simple enough—but putting theory into practice is not easy. In many communities traditional attitudes to diarrhoea are barriers to the introduction of oral rehydration therapy. For example, diarrhoea is often seen not as an illness but as a normal occurrence and, therefore, not something requiring any special kind of attention. It is rarely considered dangerous, as a child may suffer many episodes of diarrhoea and become very weak but not actually die.

Mothers' attitudes can only be changed through persuasive health education. What to drink and how to make it are of minor importance until mothers firmly believe that the treatment for diarrhoea is to drink more<sup>1</sup>. Once mothers have accepted that a child should drink when it has diarrhoea, it should be relatively easy to discuss what is the best drink under the circumstances. A change of attitude can often be achieved through demonstration. If one group of mothers in the community can be convinced about the value of *early* oral rehydration therapy, and see it working for their children, others will soon be persuaded to use it.

Traditional attitudes do not only exist in the villages. Senior paediatricians and all those involved in training health staff have to be convinced that oral rehydration therapy can play an important role in the management of diarrhoea and that it has far more widespread application than intravenous therapy or the use of often inappropriate drugs.

### **Diarrhoea and nutrition**

In many parts of the world mothers stop giving foods or liquids, including breast milk, with the onset of diarrhoea. Breast milk is not only an easily digested food but if it is withheld this can have serious implications for infants, who will not receive maternal antibodies to ward off other infections. Mothers may continue to withhold food for several days after the diarrhoea has ended. This is particularly critical for the long term health of the child because there is a dangerous link between malnutrition and diarrhoea and when a child has diarrhoea the ability of the gut to absorb nutrients can be impaired for up to two weeks after the diarrhoea has ended.

High energy foods, such as fats, potatoes and yoghurt, are well absorbed during diarrhoea. Although vomiting may be a problem, it should be possible to feed children using a cup and spoon and giving small amounts of food frequently. Raw, fibrous vegetables, fruit and spicy foods should be avoided. Bottle feeding is a contributory factor to infant diarrhoea in many countries. For economy

mothers often use too little milk powder (therefore adding to problems of malnutrition) and mix the feed with unboiled water in dirty bottles.

### **Problems with weaning foods**

In many countries, children who are being weaned are at particular risk of getting diarrhoea—even if they are still being breastfed—because of the poor nutritional content of weaning foods. It is also these earliest foods which are most likely to become bacterially contaminated. Local fuel shortages and lack of time often make it very difficult for mothers to cook frequent meals for small children. Instead, larger quantities are prepared and kept for long periods. When food is being re-heated this is often not done thoroughly enough to kill any bacteria.

### **Implementing oral rehydration therapy**

Successful treatment of dehydration from acute diarrhoea needs an integrated approach at three levels—in the home, by community health workers and in health facilities. Early home therapy is vital to prevent dehydration, therapy with oral rehydration salts (ORS, see below) is necessary to treat most cases of dehydration and intravenous therapy is required for treating severely dehydrated cases.

It is vital that mothers understand *when* they must take their child to the community health worker or nearest health facility. They must be taught how to recognize the signs of dehydration. Equally, the community health worker must understand how to make up and give oral rehydration salts solution and when, if at all, he should refer the child for intravenous therapy.

### **Oral rehydration salts (ORS)**

The World Health Organization (WHO) and UNICEF are distributing sachets of oral rehydration salts (ORS) to be dissolved in one litre of clean drinking water. The sachets contain 3.5gm of sodium chloride, 2.5gm of sodium bicarbonate, 1.5gm of potassium chloride and 20gm of glucose. This is referred to as the 'complete' formula and is recommended world-wide by WHO because it can be used to treat dehydration irrespective of the cause of the diarrhoea.

Where sachets are unavailable, there have been attempts in many places to teach mothers and health workers how to make up simple sugar/salt solutions using locally available ingredients. The problem here is that an 'incomplete' formula may be produced lacking one or more of the four ingredients of ORS. In some places, seasonal shortages or high cost mean that it is difficult to obtain even the basic ingredients of sugar and salt. There are also difficulties in finding ways to measure out accurate quantities of unrefined sugar and salt. Nevertheless,





Photograph by Dr Nicholas Cohen

*A village health worker showing children how to make up oral rehydration solution using locally available ingredients. (Bangladesh)*

these incomplete formulae, together with the use of other fluids available in the home, such as fruit juices and carrot soup, tea or rice water, have a vital role to play in the early *prevention* of diarrhoea.

### **Simple solutions**

A simple formula for an incomplete oral rehydration solution is to mix one level 5ml teaspoonful of salt plus eight level 5ml teaspoonsful of sugar in one litre of drinking water. A double-ended plastic spoon has been developed which measures out sugar at one end and salt at the other. The advantage of the spoon is that it measures out enough salt and sugar for a relatively small amount of water (200mls) so that the oral rehydration solution is more likely to be drunk quickly and not, as often happens when larger quantities are made up, left standing for hours. In hot climates, bacterial contamination of the fluid will often occur if it is left standing. The main disadvantage associated with plastic spoons is that adequate information on how to use them is often not given and that they may need to be imported if there is no local plastics industry. A third alternative is for sugar and salt to be measured out by hand. The risk of inaccurate measurement is probably greatest using this method but it does mean that people can depend

solely on what they have at home and not be dependent on supplies from outside.<sup>2 3</sup>

Health workers and mothers have to understand that they must be patient in giving oral rehydration fluid as the child may often vomit. The actual time spent in giving fluid is often a problem, especially for mothers who have domestic and field work to carry out. This is one of the reasons why in many places older brothers and sisters are being taught about oral rehydration therapy so that they can help younger children.

### **Oral rehydration with dirty water?**

In many places it is unrealistic to expect mothers to have access to clean water or even to be able to boil the water they have. Does it matter if dirty water is used to make up oral rehydration solution when clean water is unavailable? Evidence to date indicates that the benefits of early replacement of water, sugar and salt in acute diarrhoea far outweigh the possible risk of using contaminated water.<sup>4</sup> Pending further field research, a sound strategy is to advise mothers to use the cleanest water available, to boil it where possible and not to keep the oral rehydration fluid for more than 24 hours.

### **Conclusion**

Oral rehydration therapy now forms an important part of health care programmes in many developing countries. Its role as a widely available, simple but effective life-saver is indisputable. There are few other treatments for childhood killer diseases that can be given as easily at all levels of health care *and* in the home. If the value of oral rehydration therapy is to be maximized health delivery services must be strengthened so that it becomes more widely understood and available at all levels.

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### **The Potential for Managing Diarrhoea with Oral Fluids**

'The discovery that sodium transport and glucose transport are coupled in the small intestine, so that glucose accelerates absorption of solute and water, was potentially the most important medical advance this century.'

Editor, *The Lancet* 1978 ii p300-1.



# 3. The Need For an Integrated Control Programme for Diarrhoeal Disease

by **Richard Feachem**

*Senior Lecturer in Tropical Public Health Engineering, The London School of Hygiene and Tropical Medicine*

Oral rehydration and other curative approaches to diarrhoea may have a great effect upon mortality, but they cannot significantly reduce transmission or the incidence of infection and disease. Most children may be kept alive by a comprehensive curative programme which makes simple therapy readily available in the village, but they will continue to be regularly reinfected. The main goal of diarrhoea programmes must therefore be *control*.

## **How is control to be achieved?**

There are three basic approaches:

- \* interrupting transmission by the improvement of water supply, excreta disposal and hygiene;
- \* improving the general health of children by improved nutrition and by reducing the incidence of other infections;
- \* immunization.

In the long run control will be achieved by a combination of all three of these approaches but it is significant that in developed countries, and in wealthy communities in developing countries, control has been achieved by a combination of the first two alone.

## **Rich and poor**

Diarrhoeal disease is associated with poverty and with the environmental and educational conditions that accompany poverty. In wealthy communities throughout the world diarrhoeal disease has become a minor public health problem. If we look at Europe and North America, for instance, some infections have become very rare (*Vibrio cholerae*, *Shigella* species other than *sonnei*, *Salmonella typhi* and *paratyphi* and *Entamoeba histolytica*) while other infections continue to occur but cause little disease compared to their status in developing countries

(rotaviruses, enterotoxigenic *E. coli*, salmonellae, *Campylobacter* and *Shigella sonnei*).

The fundamental question in diarrhoeal disease control is *how may the diarrhoea pattern of a poor community be transformed to the pattern of a wealthy community?* If this transformation requires the elimination of poverty and a substantial improvement in incomes and educational levels, then we should not talk of diarrhoeal disease control but focus instead on overall economic development and political change. However, there is some evidence that diarrhoeal disease transmission in poor communities can be reduced in the short term by improving water supply, excreta disposal and hygiene, prior to any reduction in poverty and deprivation in the longer term.

### Transmission

The classical view of diarrhoeal disease transmission, derived from studies of major urban common-source outbreaks, was that it is primarily associated with faecally contaminated drinking water—in other words it is *water-borne*. This view has been progressively modified as more and more information has come to light on the non-water-borne transmission of diarrhoeal diseases in both endemic and epidemic situations.

It now seems very probable that, among poor people in developing countries, most of the spread of organisms which cause diarrhoea is by faecal-oral routes that do not involve drinking contaminated water. All the main diarrhoea-causing pathogens\* are transmitted from anus to mouth and there are many opportunities for such transmission in a poor and crowded community.

Water-borne transmission is but one special case of faecal-oral transmission and most authorities would agree that a great deal of the transmission of rota-viruses, shigellae, enterotoxigenic *E. coli* and *Entamoeba histolytica* is by non-water-borne routes. There is less agreement on the transmission of cholera. Some suggest that cholera is largely water-borne everywhere, others that it is mainly water-borne in Bangladesh but not necessarily elsewhere. However, a third group maintains that it is not primarily water-borne anywhere.

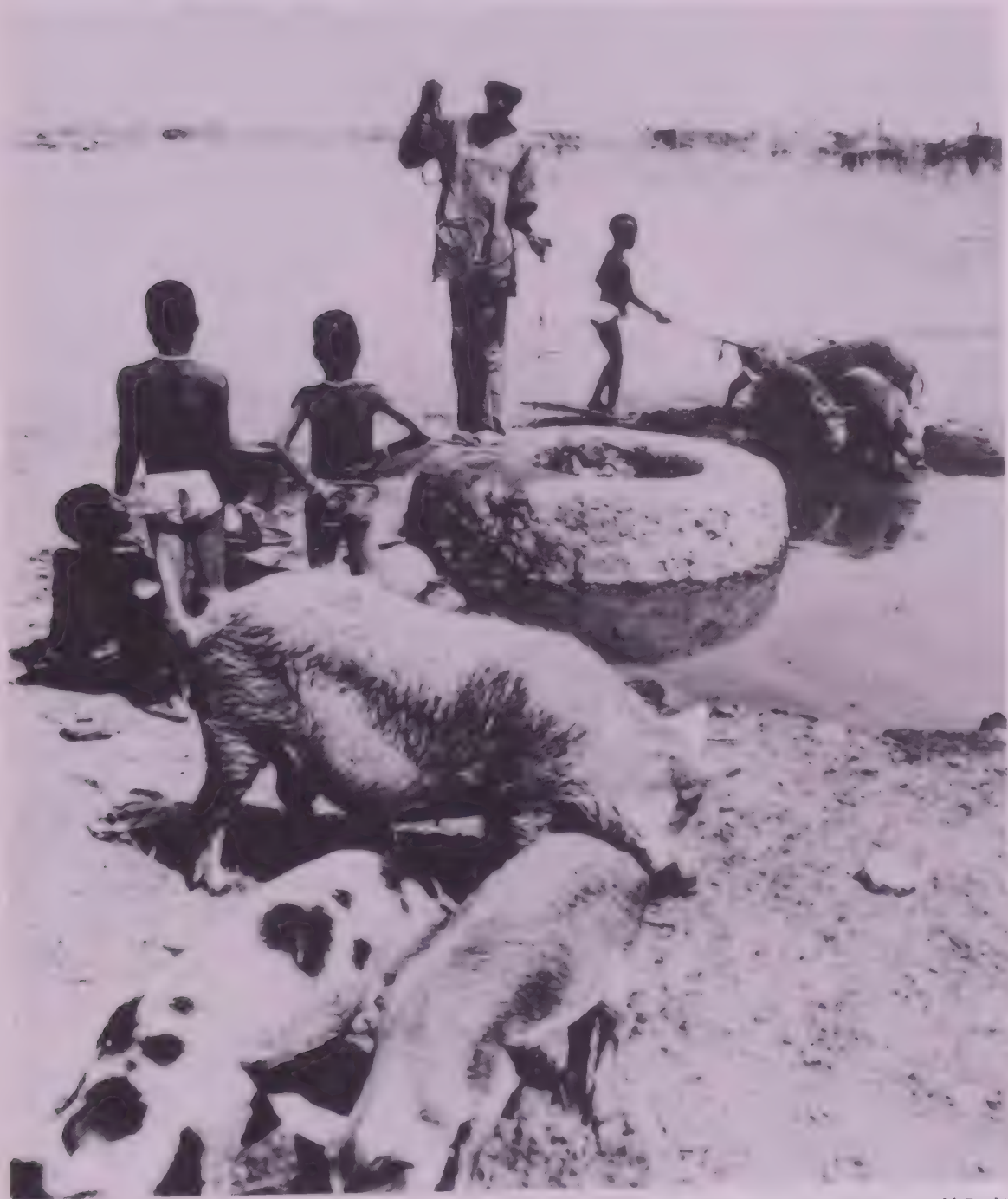
### Water quality

Water-borne transmission is reduced by improving water quality. Many people drink heavily contaminated water (containing up to  $10^4$  *E. coli* per 100 millilitres) from open wells, ponds or streams. Replacing these sources by piped water or protected wells will dramatically improve water quality and will therefore reduce water-borne transmission. However, some studies in Bangladesh<sup>1</sup>, Guatemala<sup>2</sup>,

\* Organisms which may produce disease.



Lesotho<sup>3</sup>, the United States of America<sup>4</sup> and elsewhere have found that such improvements failed to have a marked effect on diarrhoeal disease incidence. One possible explanation for these findings is that diarrhoeal diseases in the communities studied were mainly non-water-borne.



Photograph by Ray Witlin (World Bank)

*Pigs contaminate the pond surrounding an open, hand-dug well. There is no drainage and the water in the well will be heavily polluted. (Upper Volta)*

### **Water availability and water use**

If diarrhoea-causing pathogens are being transmitted by non-water-borne routes (for instance on hands, clothes and food) it is important to improve personal and domestic cleanliness. This is difficult, if not impossible, when the nearest water source is far from the house and the water must be laboriously carried in small containers. It is also difficult when there is a tap near the house which provides only an intermittent supply. Improved personal and domestic cleanliness depends upon an abundant supply of water (about 30-40 litres per person daily) located near the house and available 24 hours a day for 365 days of the year. Improved cleanliness also depends on the correct use of the water once it is available, and this behavioural factor is discussed below.



UN photograph

*The defecation and hygienic behaviour of children is crucial. A mother takes her child to use the latrine. (El Salvador)*





Photograph by D. Henrioud (WHO)

*Teaching children to wash their hands regularly—this too is primary health care. (Nigeria)*

### **Excreta disposal**

The main diarrhoea-causing pathogens are shed in the faeces and therefore the hygienic disposal of human faeces is of the utmost importance. Each family must have access to a latrine which all members use and keep clean. The latrine must be acceptable and attractive to the users. Some studies have shown that the construction of latrines does not necessarily reduce the incidence of diarrhoeal diseases. This is probably because the latrines were not used, not kept clean, or not used by the most important section of the community—the children.

### **Behaviour**

The provision of good water supplies and latrines will achieve little unless people understand these new facilities, like them, maintain them and use them. Therefore all water and excreta disposal projects must be accompanied by vigorous programmes of community education and must be planned and implemented in cooperation with the community. The promotion of frequent hand washing may be especially effective.

### Focus on children

Children are not only the main sufferers from diarrhoea, they are also the main source of infection. Symptomatic and asymptomatic infection rates are highest in children and it is their faeces which are most likely to spread infection to the rest of the family and neighbouring households. The defecation and hygienic behaviour of children is the vital but neglected component of diarrhoeal disease control programmes.

For children under about four years the educational programmes must be directed at the parents, especially the mothers. For older children, education of both children and parents is important. The design of educational programmes to change child hygiene will vary enormously from community to community. However, in many cultures (including my own in England) parents often believe that the faeces of small children are fairly harmless. It would be relatively simple to design a programme to convey the message *the stools of small children are dangerous*.

### An integrated approach

There is abundant evidence that improving *only* water quality or *only* latrines will have little or no effect on the incidence of diarrhoeal disease. We must hope, and evidence exists to support this hope, that a combination of improved water quality, increased water availability, hygienic and acceptable latrines, and vigorous and sustained educational programmes will be effective. The impact of such an integrated approach will clearly be different on different types of diarrhoea. For instance, cholera, typhoid and shigellosis may be substantially reduced whereas rotavirus diarrhoea is likely to be unresponsive.

Nevertheless the goal must be to design affordable and effective integrated programmes which will reduce overall diarrhoeal disease morbidity and mortality even before there has been any dramatic reduction in poverty. The most cost-effective mixes of water, sanitation and education are yet to be defined and are a major priority of the applied research component of the WHO Diarrhoeal Diseases Control Programme.

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## 4. The Prevention of Polio

**by Nicholas Ward**

*Medical Officer, The Save the Children Fund, 'STOP POLIO' Campaign*

In most countries the provision of curative medical services is an expensive business involving costly buildings, highly skilled personnel and complicated equipment, often difficult to maintain and replace. Moreover, the benefit of providing these services is difficult to measure, either in terms of cost or in terms of an improvement in the quality of life of the population.

These limitations are much less of a problem in the case of preventive medicine, with its emphasis on the promotion of positive health rather than the repair of an already diseased body. There is still a need for a supervising cadre of skilled workers, but most of the work can be done by people with relatively little training. There is much less need for special buildings, while the necessary equipment tends to be simple, reliable and relatively cheap. Finally, it is easy to measure the cost-effectiveness and the cost benefit of the service. For example, it is fairly simple to estimate how much it costs to prevent one case of a certain disease and compare this figure with the cost of treating such a case if it were allowed to occur. These figures also allow cost comparisons to be made from year to year and from area to area, so that programmes can be carefully monitored by the health planners.

The dramatic success of the smallpox eradication programme in all African countries clearly demonstrated that a simple effective strategy, well managed and widely implemented across an entire country, can rapidly eliminate an infectious disease. The Save the Children Fund believes that a similar dramatic result can be achieved in eliminating clinical cases of poliomyelitis in any country prepared to launch an energetic immunization programme. Unlike smallpox, the causative virus itself may not be eradicated, but cases of paralytic disease, caused by polio virus, should disappear within a few years. The cost of the programme will be more than balanced by savings in the provision of beds, surgery, calipers, wheel-chairs and special rehabilitation and educational facilities, while the relief of suffering for the individual and his family would be vast but unmeasurable.

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Photograph: courtesy of the Save the Children Fund

*Polio is usually contracted in the first few years of life. It causes pain, discomfort and disability in the growing years and leads to life-long disablement.*



## **The size of the problem**

Throughout most of Africa infection with polio virus is endemic in all communities. Infants are exposed to the virus at an early age and while just under one per cent of those infants will suffer some degree of paralytic disease, almost all will have developed immunity before the end of their fourth year. Surveys have suggested that up to 10 per cent of paralyzed infants will die during the acute attack, 14 per cent will be left severely paralyzed, i.e. unable to walk, 14 per cent moderately severely paralyzed, i.e. can walk with mechanical assistance, while 10 per cent will recover completely with no detectable residual paralysis.

As sanitation in a community improves, the infant will be less exposed to polio virus and may well reach six months of age, when maternal antibodies cease to offer protection, without having experienced any polio infection. This improvement in hygiene is usually reflected in a falling infant mortality rate and it has been observed that when this declines to 80 deaths per 1,000 live births, polio tends to convert from an endemic to an epidemic disease, affecting an older age group, affecting them more severely and, in some epidemics, affecting as many as 16 per cent of the susceptible population.

The reason for this phenomenon appears to be that where virus exposure is delayed by improved sanitation, or reduced by incomplete immunization programmes, it is the more virulent strains of the virus which survive. Clearly, in the absence of a competent immunization programme, polio will become an increasingly important problem. Equally important, travellers, symptomless but excreting virulent virus, may cause extensive outbreaks outside their own community, so the problem should be seen as a continental one and not one solely concerning individual countries.

## **An immunization programme**

Once a programme is instituted, even though success may be anticipated in one or two years, high levels of coverage must be maintained indefinitely and, realistically, this can only be done through a government immunization service based on fixed clinics. Although the idea of mobile teams visiting villages is attractive, problems of transport and fuel, and the difficulty of keeping schedules, make reliability uncertain and can cause loss of faith among the community.

At the start of the programme, however, there is much to be said for a campaign approach based on visits to villages. This has a number of benefits: removing a backlog of susceptibles; obtaining co-operation from village leaders; involving the community in health matters, and persuading parents of the benefit of immunization as a positive factor in their children's health. It is important that local peripheral health staff are involved in the planning and implementation of the campaign so that it is *their* programme, not one imposed from a higher

level.

It is vital that an 'advance man' visits the village the day before the teams, to announce the immunization session, arrange the site, obtain the co-operation of village leaders and attempt to make them feel responsible for the success of the session. Careful programming of team visits is necessary. They should not be so ambitious that schedules cannot be met, and should aim at the most efficient use of team time, transport, fuel and vaccine storage facilities.

At each session one team member completes an immunization card for each child and keeps a tally sheet of the number of vaccinees. A second person administers the vaccine. Village people should marshal the mothers, provide tables and chairs and assist in educating the parents about the benefits of immunization, stressing the absolute safety of the vaccine and the need for the course of three doses to be completed. After the third visit to a village it should be made absolutely clear that the team will not be visiting again, but that all infants born in the future must be taken to the nearest under-fives' clinic. An integral part of every immunization session should be an evaluation six months later to see how many infants received one, two or three doses of vaccine and what percentage of eligible infants later attended the clinic. Where this evaluation shows less than 80 per cent receiving a full course of vaccine or where there are no local clinics, a campaign approach to immunization may have to be maintained.

### **The maintenance phase**

After the initial campaign approach, immunization against polio should take its place as an integral part of the programme being offered at under-fives' or well-baby clinics. Probably, in view of the wide acceptance of polio immunization by the public and the ease of administration of oral vaccine, the only two problems remaining are the guarantee of a regular, unfailing supply of vaccine to these clinics and the provision of adequate and efficient storage and transport equipment.

### **The type of vaccine**

Two types of polio vaccine are presently in use: a killed or inactivated vaccine (IPV), developed initially by Salk in 1955, and an oral vaccine containing trivalent attenuated living virus (TOPV) developed by Sabin in 1963. The IPV is delivered by three injections at monthly intervals, with booster doses every five years. The TOPV is administered orally, three doses being given at least one month apart. The major long-term advantage of TOPV, apart from its lower cost and more ready availability, relates to the fact that the attenuated laboratory virus, itself, spreads within a community, displacing the wild virus which there-



fore dies out. If 80 per cent of eligible children are immunized with TOPV, the vaccine virus is spread from child to child in a similar manner to the natural transmission of the wild virus, and the whole community will become immune.

In summary, unless a country has already embarked on a programme using IPV, it is probably wise to initiate and continue programmes using TOPV.

### **Storage of vaccine—the Cold Chain**

TOPV is a live virus vaccine and, like measles vaccine, needs to be stored at minus 20 degrees centigrade, although potency may be maintained for up to a month at 0 degrees centigrade. If not stored under these conditions its potency cannot be guaranteed. The 'Cold Chain', which attempts to achieve optimum storage conditions, consists of two factors: the physical structures and the transport and storage systems. A central cold store, preferably solely used for vaccine storage, should be sited close to the port of entry or place of production of the vaccine.

Cold boxes, strongly constructed, well insulated containers cooled by deep-frozen packs, are used to transport vaccines to peripheral stores where, again, deep-freezers and refrigerators are used to store the vaccine. From the peripheral store vaccine carriers or thermos flasks are used to carry vaccine to the clinics.

Just as important as the physical structure of the cold chain is its management. Systems of stock cards or ledgers, an indenting system for supplies, recording of refrigerator performance, maintenance of equipment and procedures to be carried out in the event of refrigerator failure are all vital parts of the chain. Staff training must therefore be considered an integral part of any immunization system.

### **Reporting and surveillance**

At best only one in four polio cases are ever reported and more commonly one in every ten. As an immunization system evolves and as it controls the disease, the occurrence of polio cases becomes vitally important and all curative units should be geared up to report them accurately and promptly. Each case needs to be investigated. Was the victim immunized? Had he travelled outside the area? Are there any further cases?, etc. If cases do occur, it is vital that immunization be given to all children in a large circle around the case. The development of surveillance to detect polio and other infectious diseases through an epidemiological unit can be a worthwhile bonus to any country wishing to develop its preventive health services.

### **Evaluation**

The Save the Children Fund has evaluation teams operating in the countries in

which it is running programmes. These consist of health workers on motorbikes who visit people in their own homes to obtain information on three aspects of the programme: 1, the level of coverage achieved (in Malawi 92 per cent coverage was achieved during the team's first visit); 2, the number of mothers attending the clinic with children born after the team's visit; 3, the number of cases of other infectious diseases, such as typhoid and cholera, and the reasons for any subsequent polio incidence (for example a child may have been absent from the village during immunization).

Progress is being made but there is no room for complacency, because the problem is growing in those parts of the world which are most vulnerable. Last year in the United Kingdom there were two cases of polio. Last year in Malawi there were an estimated 1,500 cases. I think this fact should be seen as a sad indictment of the values of the world community, despite the excellent leadership and support provided by the World Health Organization and other bodies.

An estimated 45 pence to provide complete protection is a small price to put against the life of a child who, without immunization, may die of the disease or never walk again. Once you've got polio you've got it for life. Once you've gained immunity you've gained it for life. Nowhere is this reminder more essential than in the developing world.

### **The Save the Children Fund 'STOP POLIO' campaign.**

In order to commemorate its 60th anniversary and the International Year of the Child, the Save the Children Fund established a campaign aimed at assisting countries to intensify their immunization programmes not only against polio, but against the other infectious diseases of childhood, including measles.

The Fund is currently assisting the governments of Malawi, Swaziland and Lesotho and the assistance has included the provision of:

- basic surveys on the incidence of polio and the effectiveness of the cold chains
- training in management techniques
- provision of potent polio vaccine
- improvements to the cold chain, including the construction of vaccine stores and equipment
- improvements in transport facilities
- provision of expertise to run the cold chains and the immunization campaigns
- independent evaluation when appropriate



# 5. Leprosy and the Prevention of Deformities

**by S. G. Browne, C.M.G., O.B.E.**

*Secretary of the International Leprosy Association.*

Everybody knows that there is a lot of deformity in countries of the Third World. You see beggars of all ages in many of the big cities and many more are hidden away from public view. The visible and obvious signs represent the mere tip of the iceberg of physical, mental and social handicap. The actual numbers are of course quite unknown, just as the personal tragedies and the economic cost to the community are beyond computation. In the case of leprosy this terrible toll is largely preventable. Yet the problem is neglected because leprosy is surrounded by a taboo of silence and shame.

Leprosy does not kill but it does deform, and its deformities are both lasting and cumulative. The disease is never congenital or inherited, but infection may be acquired early in life and, after a variably long silent period, skin manifestations appear. The deformities of hands, feet and face habitually associated with leprosy are in the main the result of damage to the peripheral nerves and, as such, do not usually appear till after the lapse of some years.

## **Size of the problem**

Nobody knows, not even the World Health Organization, how many sufferers from leprosy there are in the world. Some governments do not send statistics to the WHO, others send misleading figures or underestimates. It is still a matter of some shame to have to confess to a sizeable leprosy problem. Of course, leprosy is not unique in this regard. It shares with other infections and conditions this general under-reporting. But it is in a special category by reason of the prevalent attitudes, ignorance, prejudice and misunderstanding that surround leprosy more than any other disease.

The official estimate by the WHO is 11.2 million leprosy sufferers in the world. Of these, only about one in four has any chance of treatment. And it may be safely assumed that about one in every four leprosy sufferers has some degree of physical handicap or disability.

## Nature of the problem

Leprosy doesn't kill—it cripples. Yet damage to the extremities and the face is not inevitable in leprosy infection. The popular image of leprosy, conjured up in the imagination of ordinary people and sometimes fostered and reinforced by unwise propaganda, is of ulcerating and deformed hands, feet and face, accompanied by blindness. But this is rather a picture of advanced and neglected leprosy. The early infection, having insidiously and painlessly installed itself, is characterized by slight changes in the colour of the skin—some loss of pigment in dark skin and some redness in the lighter hued. In ordinary terms leprosy is only slightly contagious. As an infection it can be contained in most cases and cured in some.

In the early stages the leprosy bacilli cause slight and reversible damage to the skin. But since they have a predilection for superficial nerve tissue, they soon begin to multiply within the nerves. In patients with little or no resistance the multiplying bacilli cause little damage to the nerves. But patients who have a greater degree of resistance suffer severe nerve damage by reason of the chronic inflammatory cells that are mobilised to counteract the scanty and dying bacilli. The result is comparatively early damage to nerve fibres, with consequential loss of both sensory and motor modalities. Clinically, this nerve damage is seen as loss of sensation and impairment of muscle power. The sensory loss deprives the patient of the protective reflexes that should come into play when pain is felt. Hence there is damage to the extremities, resulting from unappreciated repeated trauma. The motor loss leads to patterns of deformity and contractures. The fingers are therefore subject to painless ulceration and to paralysis which occurs progressively. Eventually the wrist drops because of damage to the radial nerve.

In the foot, loss of sensation in the sole leads to ulceration, primarily at sites of pressure or shearing stress. And there is impairment of muscle power through nerve damage, which shows itself first in foot-drop. In the face, upper facial palsy leads to inflammation of the eyes with the tragic consequences of blindness. A person who has already lost sensation in his fingers and who becomes blind is thus doubly cut off from the land of the living. This, then, is the picture of advanced, neglected leprosy—and it is almost entirely preventable. The tragedy in the world today is that the damage is not being prevented: it could be, but it is not.

If preventable, why not prevented? There are many possible answers: the failure of governments to accord to leprosy the priority that it really deserves; the neglect of leprosy by medical personnel generally, in education, in attitudes, in practice; the insidious, symptomless installation of the disease, and its slow painless progress; the long treatment necessary; the chronicity of the late deformities occasioned by leprosy; the lack of a skin test, and also of a specific and



safe vaccine; the lack of pharmacological research and investment in the search for new drugs.

What could be done, now, to prevent the deformities due to leprosy in the world, and so save the present generation from the horrors and tragedies that have for centuries been a threat to half the world's peoples? A great deal. And what we say about the prevention of deformities and disabilities due to leprosy can be applied, in some measure, to many of the other handicapping diseases and conditions which afflict some four hundred million of our fellow human beings.

### **Means of prevention**

1. Ensure that in all countries leprosy will be diagnosed early and treatment instituted before the onset of nerve damage.
2. Make certain that teaching and clinical instruction about leprosy is included in the curriculum of all medical and nursing schools and institutions for training auxiliary health workers.
3. Educate the general public to understand what leprosy is, and what it is not, so as to remove wrong ideas and replace them with accurate facts. To this end, attention should be paid to the opinion-formers in the community, radio and television, the press, the political leaders, the teachers, church groups, women's organizations, students and schoolchildren. Any concentration on leprosy alone is likely to be counter-productive, inducing the impression that leprosy is somehow different and exaggerating its importance in the community. There should be general health education which sets leprosy in the context of nutrition, water-related diseases, family planning, other transmissible diseases, etc., and all in the practical setting of the local problems.
4. Convince everybody, especially the health workers of all grades, that deformity and mutilation are not the necessary accompaniments or results of leprosy. The disease can, and should, be diagnosed long before there is any suggestion of peripheral nerve damage or its unfortunate consequences.
5. Train all health workers in the early recognition of incipient damage to peripheral nerves and eyes, and show them that such damage may usually be prevented. If some damage has already occurred, further damage may be prevented. This means knowing what to look for and what to do. It also means communicating meaningfully with the patient and his, or her, family. For example, they must be shown how to continue working or cooking, while taking care of anaesthetic extremities, by wearing protective shoes or sandals (adapted from local materials, cheap, repairable, not identifiable or stigmatizing as being worn only by sufferers from leprosy). They must learn to use moulded handles for worktools, and non-conducting handles for cooking utensils. Watching individuals while they are at work, especially when engaged in

repetitive activities that may damage insensitive tissues, will often indicate ways to protect such tissues. Fire burns and heat hurts—you and me. But people deprived of sensory awareness may find themselves severely burned or scalded without knowing how it happened.

6. Provide sheltered workshops and home industries. Establish market-gardening and poultry-raising projects. These can all play a part in rendering economically independent and sturdily dignified a man or woman who would otherwise be thrown on the scrap-heap by a prejudiced and ignorant public.

7. Employers, too, have to be convinced that what an individual may apparently lack through disability may be more than compensated for by dedicated motivation, so as to keep the job in a fiercely competitive labour market.

8. We have known for some years that when dapsone<sup>1</sup>, the common drug used for treating leprosy, is given prophylactically to household contacts, regularly and for a long time, the risk of these contacts developing leprosy is reduced by about three-quarters. But there are snags: if the world cannot at present assure treatment for active leprosy for more than one in four of those now suffering from the disease, how can it be possible to give drug prophylaxis to five times the number of actual sufferers (that is, the average number of contacts) for a long time and with adequate supervision?

The search for a specific and safe vaccine has run into many difficulties. Although considerable quantities of *Mycobacterium leprae* are now available from experimentally infected armadillos, it is becoming increasingly clear that the relatively easy stimulation of the production of antibodies to the various biochemical components of the leprosy bacillus will not provide the answer. What is needed is some agent or substance that will specifically sensitize the lymphocytes of the recipient to do what they can't do, or don't want to do, that is to recognize and to destroy invading leprosy organisms. So far, despite the international co-operative efforts under the aegis of the World Health Organization, the pursuit of the elusive specific vaccine has been unsuccessful. Even if and when a specific and safe vaccine becomes available, and the necessary prolonged testing proves its efficacy, considerable practical and ethical problems remain. We must do what we can, without waiting for vaccine.

9. Changing peoples' attitudes to leprosy is all-important in attempting any kind of prevention of deformity and disability. What the victims of leprosy think about themselves and their disease, and what their family, friends, neighbours, workmates and fellow-villagers think, will determine the extent of the physical damage and psychological hurt they suffer. Leprosy is thus not just a specific disease caused by a known micro-organism, but a complex mass of folklore and superstition, of cultural and linguistic associations, of misunderstandings and misapprehensions. The ostracism and revulsion, the persistent cruelties and





Photograph by K. Frucht (WHO)

*This simple test for the diminution of skin sensation can be used for the early detection of certain kinds of leprosy. (Burma)*

punishments (visited on uninfected offspring as well as on morally innocent victims of the disease) make of leprosy a socially unique disease, whose control is thus rendered difficult in the extreme.

10. An appropriate organization of medical services is vital in preventing the deformities associated with untreated leprosy. Gone are the days when separate vertical programmes were thought to be the only way of tackling the various health problems as they presented themselves. Granted, wherever the relative importance of a problem justifies it, a separate programme for, for example, tuberculosis or malaria or family planning, may be the best means for ensuring adequate coverage, but such schemes involve extra expense and duplication of services. Expert advice on each particular problem should be available to the central health planners and, where the local prevalence rates are high, arrangements can be made for adequate facilities for diagnosis and treatment within the overall plan. Provided that leprosy is not neglected, or relegated to the end of the queue, an integrated comprehensive service, urban and rural, will provide the best means for ensuring that everybody needing treatment for active leprosy can have it. The service should also include education in the protection of insensitive extremities and the use of protective footwear plus the provision of physiotherapy and reconstructive surgery for established deformities. In theory this may be desirable. In actual practice it rarely attracts more than lip-service.

That, in short, is the problem of preventing deformity in leprosy today in the world as a whole. We know what to do, but we are not doing it. If we applied existing knowledge we could control leprosy in this generation and prevent the deformity due to leprosy. We know enough, but we are not doing enough.

<sup>1</sup>**Editor's note.** A World Health Organization expert panel recently reported a disturbing increase in dapsone resistance. The number of countries affected is now thought to be over 25 and the incidence is rising steadily. The almost total dependence on dapsone monotherapy has led to a dangerous epidemiological situation, the panel believes, and the only solution is to use multiple drug therapy. Low-dosage dapsone therapy and irregular treatment favour the emergence of drug-resistant strains of leprosy bacilli. Patients in poorly managed leprosy control programmes are more likely to develop dapsone resistance than those in well managed programmes. (*Chemotherapy of Leprosy for Control Programmes, Technical Report Series 675, WHO, Geneva 1982*).



# 6. Resources for Health Care

**by David C. Morley**

*Professor of Tropical Child Health, University of London*

There are 1,400 million children living in our world, according to recent estimates. Four out of every five of these children live in the Third World, and their numbers are increasing by an additional 300 million every decade. A child in the Third World is likely to have between five and ten times more diseases than his counterpart in a developed country and most Third World children live in rural areas where medical resources are scarce.

In less developed countries, where child health is dominated by the related problems of nutritional deficiency and infectious diseases, deaths between the first and the fifth birthday have been computed at an annual rate of 50 per 1,000. The rate is 5 per 1,000 in more affluent societies. In areas of the world where children may comprise 40 per cent of the population, one-half of all deaths usually occur in the years between birth and the age of five.

Recent studies in South America and elsewhere confirm the belief of many concerned with child health that adequate nutrition must be a priority. Comprehensive nutrition and health care programmes have been shown to yield positive results. A recent report on nutrition and health care programmes around the world, published by the United States Overseas Development Council in 1980<sup>1</sup>, states:

'The findings of these projects are obviously very encouraging. Taken together they present a persuasive case that, in the hands of able leaders and in populations of up to 60,000-70,000, well designed and effectively operated projects can reduce infant and child mortality rates by one third to one half or more within one to five years, at a cost of less than the equivalent of two per cent of per capita income—an amount no greater than currently being allocated to health nationally.'

To be effective, programmes to improve child health must depend heavily on having a village health worker living in the community. In most developing countries these are the workers directly responsible for care and supervision, enabling the limited numbers of doctors and public health nurses to deploy their

## THE VILLAGE HEALTH WORKER\*

Like the Chinese 'barefoot doctor', the village health worker is chosen by the community as someone who is especially able, kind and respected as a healer or leader. He or she continues to work in the fields, alongside the other village workers, but will spend perhaps one hour a day providing health care. Training and support is provided by the nearest health centre and the health worker will be paid in part by the village community.



Here is the village health worker in Jamkhed, Maharashtra State, India, standing proudly beside the medicines she has been taught to use. In her basic training she learns to use seven drugs and also learns about seven vaccines. She advises on nutrition, pregnancy and contraception as well as treating common ailments. Despite the fact that she is illiterate, she keeps records of pregnancies, births and deaths and details of leprosy and tuberculosis patients, with the help of a school-going child. She knows how to use a weight-for-age chart to compare an infant's weight with a satisfactory growth curve.

\* Source: R. and M. Arole *Jamkhed: Comprehensive Health Care and Agricultural Development* Foundation for Teaching Aids at Low Cost, 1977.



expertise in training, supportive and supervisory roles. Experience from all parts of the developing world now points to the need for large numbers of village health workers as the main resource in primary health care provision. There should be one locally trained worker for every 500 persons. The success of village health workers depends on their ability to communicate, but we need to remember that some of the most successful health workers have been illiterate. Less well educated health workers will stay in the village, while those with secondary education are tempted to move to the cities once they have been trained.

Although the majority of people in most developing countries live in rural areas, three quarters of doctors and hospital services are based in large towns and cities. While 75 per cent of deaths are due to conditions which can be prevented at low cost, the largest portion of the health budget, in most countries, is allocated to costly and inappropriate curative services. This rural/urban imbalance is particularly tragic in a situation where the resources available are severely limited, as they are in most Third World countries. In 1970—and allowing for inflation there has been little improvement since then—the average



Photograph by D. Henrioud (WHO)

*A village health worker brings primary health care into the family home. (Lake Titicaca area, Peru)*

health care allocation in developing countries was US\$1 per person per year, compared with an average of US\$100 in most developed countries. Even worse is the imbalance which emerges when we look at the proportion of this tiny health budget which is spent in the rural areas.

In 1976 an Indian government committee conducted a study to discover how the health budget's dollar per head of population was being spent in one state with 80 million inhabitants. It was found that 80 per cent of the total was being spent in three cities, while only 4½ per cent was being used to provide services in the villages. In other words, the villages were getting the equivalent of two US cents per head per year for health care. Unfortunately, this is fairly typical of the unrealistic pattern of resource allocation in many developing countries.

The main problem leading to a crucial imbalance of rural/urban provision derives from the tendency of most developing countries to invest enormous sums of money in building large teaching hospitals—'disease palaces'—designed with western technology in mind. Not only are these institutions immensely expensive to build and equip, but their running costs may absorb between one-quarter and one-half of the total recurrent health budget. Moreover they will drain skilled professionals away from community services.

In most developing countries health services are geared towards specialized curative care, when the real need is for an effective prevention programme. I would like to see the emphasis being placed on primary health care, with village health workers going into people's homes.

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- <sup>1</sup> D. R. Gwatkin, J. R. Wilcox, J. D. Wray, *Can health and nutrition interventions make a difference?* US Overseas Development Council, 1980.

### What is Primary Health Care?

Most ill-health can be prevented by relatively cheap methods:

- ★ adequate water supply
- ★ adequate nutrition
- ★ safe sanitation
- ★ immunization against major diseases
- ★ treatment for cuts and common ailments
- ★ health education
- ★ family planning
- ★ community participation in primary health services
- ★ training of local primary health workers



# 7. Self Reliance Through Appropriate Technology

**by Christine Hogg**

*Executive Director, Appropriate Health Resources and Technologies Action Group (AHRTAG)\**

In industrialized countries we tend to rely on large centralized hospitals, costly drugs and sophisticated technologies. Rather than promoting good health, our health services seem to place more emphasis on curing sickness. Increasingly we are being forced to recognize that high technology and costly medicines alone do not necessarily improve people's health. And excessive reverence for the professional and the specialist can stop people taking responsibility for their own well being.

In developing countries it is estimated that 80 per cent of people have no access to any kind of health care system. To adopt our pattern of care, with expensive hospitals in a few major towns, would swallow up a large proportion of a nation's health budget but still serve only a tiny minority of the population. In any case, many of the diseases and disabilities now affecting millions of people in developing countries could best be prevented by public health measures such as clean water and sanitation. Engineers may be more necessary than doctors and nurses.

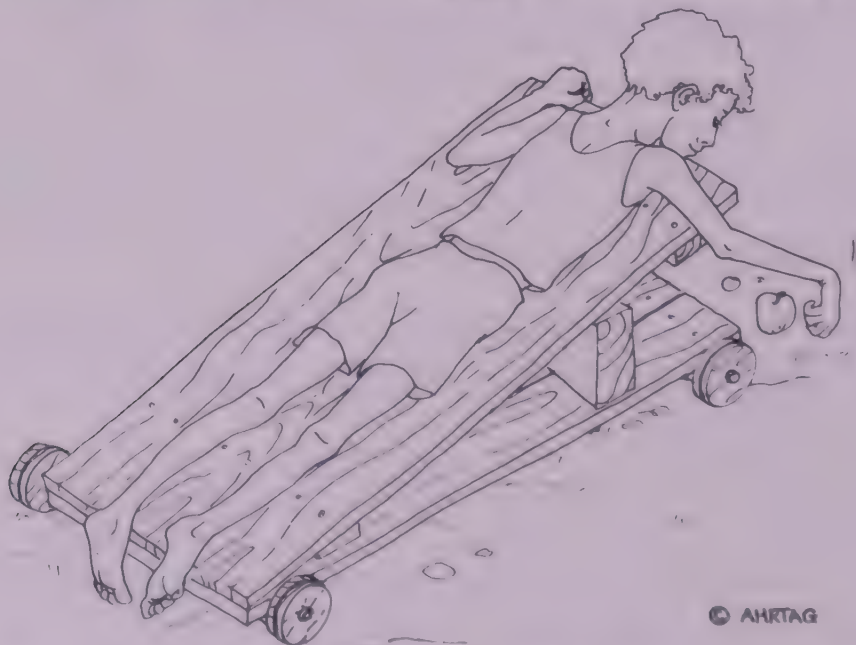
One answer to the problem of providing health care services in poor countries with scattered rural populations is to adopt appropriate technologies. An appropriate technology is one which fits the particular circumstances in which it is to be used. It fulfils peoples' immediate needs, can be developed on the spot using local resources, and does not cost more than the local community can afford. Based on an original concept by Dr. E. F. Schumacher, the idea of appropriate technology is clearly just as relevant to industrialized countries as to the Third World. But in the field of health services for developing countries appropriate technology can provide some immediate solutions.

The idea of appropriate technology can be applied to all health provision and

\*AHRTAG is a charity promoting the development of appropriate technologies for community health programmes in developing countries.

includes not just hardware but the whole range of simple and effective primary health care services. But for disabled people in developing countries appropriate technology has a particular role to play. In order to be independent in the community, and to earn a living, a disabled person needs to be able to sit up, to use his hands and to be as mobile as possible. Special aids have been developed for disabled people in industrialized societies but many of these are totally unsuitable for conditions in developing countries. The conventional wheelchair, for example, is designed to run on smooth pavements and will grind to a halt on sandy or stony ground. It will be difficult to repair in a remote village and spare parts will be virtually unobtainable. Cultural considerations are also important. If it is customary for people to sit on the ground a disabled person will not want to be raised up in a wheelchair. A low wooden trolley, made by the village craftsman, would be a much more appropriate solution. The best design will probably come from the disabled person himself, collaborating with the craftsman who understands local materials.

Simple, locally-made aids have many advantages. They are easy to make and cheap to replace. They can be made to suit the individual's requirements and adapted to his or her changing needs. They can be specially designed and decorated to appeal to children. And making use of local ingenuity, and locally available materials, provides much needed employment in the village.



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*Design of appropriate technology aid by Don Caston from Low Cost Aids, by Don Caston, drawings by Joan Thompson, AHRTAG, 1982; available from AHRTAG, 85 Marylebone High Street, London W1M 3DE. Also available: Low Cost Physiotherapy Aids; Playing Together (aids for play); How to Make Hand Grips*



## 8. The Role of Children in Health Care

**by Duncan Guthrie, O.B.E.**

*Director of The CHILD-to-child Programme*

*Let's eat three mixed meals a day  
Every day, every day,  
Let's eat three mixed meals a day  
To keep our bodies healthy.*

*Let's eat kumu every day  
Every day, every day,  
Kumu with kaukau every day  
To keep our bodies healthy.*

*(Kumu—green leafy vegetable; Kaukau—sweet potato)*

Small children in Papua, New Guinea, are being taught to sing this song to the tune of *London Bridge is Falling Down*. The full version appears in a book of songs about nutrition, which have been written by students at the Bagi Agricultural Centre. In sending their book to the CHILD-to-child headquarters in London, the students were providing one more inspiring example of the programme's success.

The CHILD-to-child Programme is clearly one of the most enduring benefits of the United Nations *International Year of the Child*. It is geared specifically to the needs of children in the developing world. Based on the widespread observation that children under five spend much of their time in the care of older brothers and sisters, the programme aims to teach school-age children about health and general development in a constructive and stimulating manner.

Nearly 1½ million children in 60 countries have been involved in CHILD-to-child activities since the programme was launched in 1979, the *International Year of the Child*. Regional workshops were held in India and Kenya in 1979, in the Philippines in 1980 and in Indonesia and Lesotho in 1981, and a mobile



Photograph by D. Mangurian (UNICEF/WHO)

*Children under five spend much of their time in the care of older brothers and sisters.*



exhibition of photographs and texts has been seen in many countries.

The illustrated health manual *CHILD-to-child*<sup>1</sup> has been published in English, Spanish, Portuguese, Indonesian, Arabic and Telegu; and editions in French and Swahili will soon be available. A range of 'Activity Sheets', dealing with health care topics, is also available in English, French, Spanish, Arabic and Portuguese. The most recent publications include a booklet on using the *CHILD-to-child* concept in refugee camps<sup>2</sup> and another specifically concerned with disabled children.<sup>3</sup>

In her report *CHILD-to-child Evaluation 1981*,<sup>4</sup> Dr. Marie-Therese Feuerstein testifies to the programme's acceptance and success.

'In countries of greatly differing geographic, socio-cultural and political characteristics, in both rural and urban areas, there is ample evidence of carefully cultivated and dynamic *CHILD-to-child* activities . . . which have generated a wealth of original materials and artefacts. The *CHILD-to-child* concept, a concept based firmly on a common reality, has often been the catalyst for actions of many kinds which sought to respond to the overwhelming needs of children.'

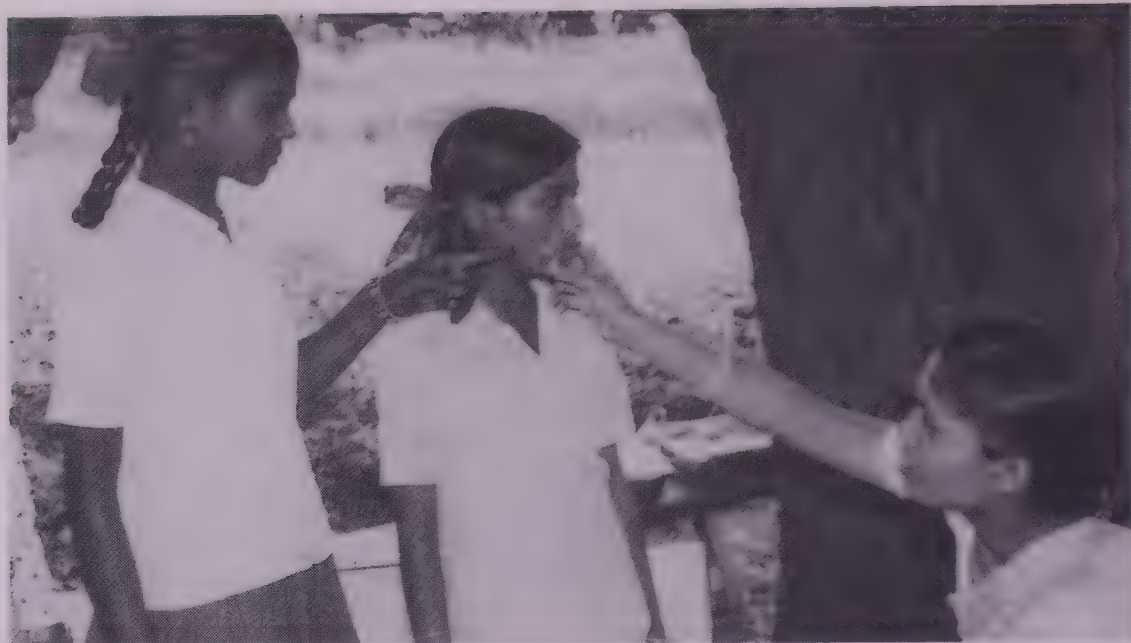
Examples of *CHILD-to-child* in action from all parts of the developing world indicate the extent to which children are not merely beneficiaries, but also participants with older children, parents, teachers and health workers in a positive and constructive international welfare movement. And perhaps, as Professor David Morley advocates, the time will come when the programme takes its logical place in the school curriculum, as a recognised subject vital to the lives of millions of people throughout the world.

### Measuring Malnutrition

One of the activity sheets produced by the *CHILD-to-child* Programme shows how older children can learn to identify those infants in their community who are suffering from malnutrition. The sheet gives instructions on how to make and use a Shakir measuring strip. The Shakir strip has sections coloured green, yellow and red so that it can be used by children who do not understand numbers. A measurement is taken around the upper middle arm of infants between the ages of one and five years, and this gives an accurate indication of the child's nutritional status. An infant whose arm measurement lies within the red section is suffering from malnutrition and a parent or health worker must be alerted.

### Leprosy Survey in India

An exciting and important *CHILD-to-child* project was carried out in Pune, in the state of Maharashtra, India, where children were encouraged to take part in a



Photograph: courtesy of Pune District Leprosy Committee

*A schoolgirl shows a health worker the patch on a friend's cheek which she suspects may be leprosy. The younger girl proved to be a borderline leprosy case. (Pune, India)*

leprosy education and detection programme.

For many generations leprosy has been the subject of fear, dread and stigma. In the Pune project the disease was talked about openly and everyone was encouraged to ask questions and seek advice. Paramedical workers explained that now, with better knowledge, the disease can be eradicated.

Many children came forward voluntarily to take part in the leprosy survey. They were keen to look for paler skin patches, an early symptom of leprosy, on their own bodies and those of friends and fellow students. They also helped to supervise the examinations by getting the other children to form queues and taking their names.

As a result of the programme, which covered 303 schools, more than 145,000 children were examined for early symptoms of leprosy and 622 cases were referred to out-patient clinics for treatment.

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# 9. Overcoming Disability Where There is No Doctor

**by David Werner**

*Director of The Hesperian Foundation, California, U.S.A.  
(incorporating Project Piaxtla\*, Mexico)*

In looking at the question of disability and rehabilitation in the Third World, we really need to recognize that the biggest disability is poverty itself. Many of the physical and mental disabilities found in poor communities are related to poverty. The greatest barrier to overcoming these disabilities is people's lack of confidence in themselves. And compounding this lack of confidence is the tendency of experts and those in positions of power to try to do things for the poor, to provide services, to provide care, to make them more dependent. Ultimately the poor will only overcome their disabilities when they gain more control over their own health and their own lives. The movement from dependency to independence is crucial, not only for the individual disabled person, but also for the poor community as a whole.

One thing that we have learned from working so long in the mountain villages in Mexico is that the standard education process itself can be disabling. Rather than teaching and sharing ideas in a formal school setting, we need to look for the ways in which country people, people with little formal education, traditionally learn. One of the traditional methods of learning, used by people in all parts of the world, is story telling. The story below is used in the training of health workers in Mexico and other parts of Latin America. It gives an insight not only into the problems of disability but also into questions of communication, confidence and self respect.

## **The importance of not knowing it all**

A teacher of village workers who had a college degree was working as a volunteer in the mountains of western Mexico. One day, as he arrived at a small village

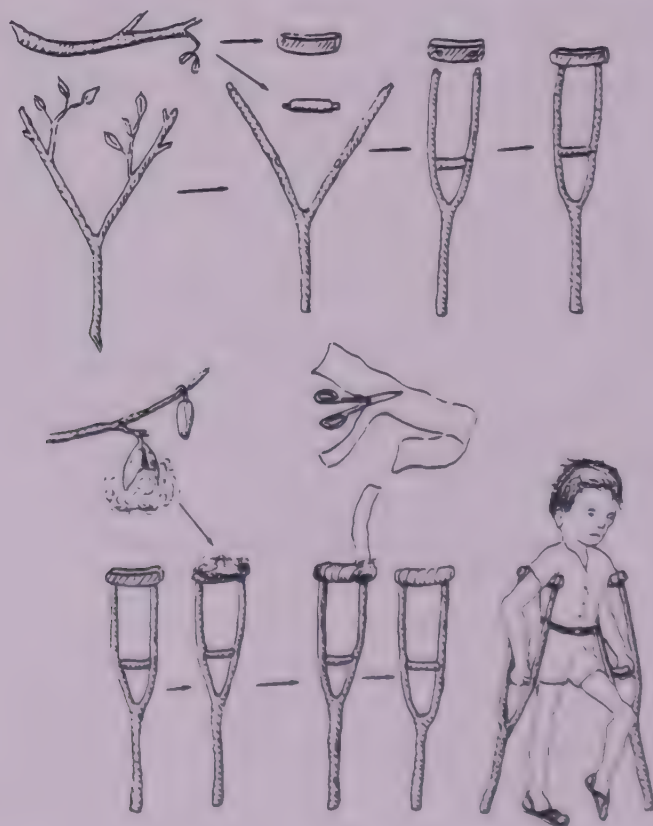
\*Project Piaxtla is a community based health programme serving 100 small villages in the mountains of western Mexico. Founded by David Werner in 1965, it is now controlled and staffed entirely by local villagers.

on mule back, a father approached him and asked if he could heal his son. The health worker followed the father to his hut where the boy, whose name was Pepe, was sitting on the floor. His legs were crippled by polio. The disease had struck when he was a baby and he was now 13 years old.

Pepe smiled and reached up a hand. The health worker examined him. 'Have you ever tried to walk with crutches?' he asked. Pepe shook his head. 'We live so far from the city . . .', his father explained apologetically. 'Why don't we try to make him some crutches here?' suggested the health worker.

So next morning the health worker got up at dawn. He borrowed a machete—a large curved knife—and went into the forest. He searched until he found two forked branches. He took these back to the home of the crippled boy and began to make them into crutches.

The father came to see the crutches being made. When he had examined them for a moment he said, 'They won't work!' Frowning, the health worker said, 'Wait and see.' When both crutches were finished, he showed them to Pepe,



*How to Make Simple Crutches. The crutches described in David Werner's story are illustrated in his book Where There is No Doctor (Macmillan, 1979). The instructions can be followed even by someone who cannot read.*



who was eager to try them out. His father lifted him into a standing position and the health worker placed the crutches under the boy's arms. But as soon as the boy tried to put his weight on to the crutches they bent double and broke.

'I tried to tell you they wouldn't work,' said the father. 'It's the wrong kind of tree you used. That wood is as weak as water. But now that I see what you have in mind I'll go and cut some branches of a better wood which is as tough as iron, but light—you don't want the crutches to be too heavy.'

So the father took his machete and went into the forest. Fifteen minutes later he came back with two strong forked sticks and at once set about making the crutches, his skilled hands working rapidly. The health worker and Pepe himself assisted the father. When the new crutches were ready Pepe's father tested them by putting his whole weight on them. They held him easily, yet they were light. Next the boy tried them. At first he had trouble in balancing. But soon he was able to hold himself upright, and by afternoon he was actually walking with the crutches.

The only problem now was that the crutches caused soreness where they rubbed the skin under his arms. 'I have an idea', Pepe's father said. He went across the clearing to a wild kapoc tree and picked several of the large ripe fruit. Then he gathered the cotton-like substance from the pods and put a soft cushion of kapoc on the top cross-pieces of each crutch. He secured the kapoc in place with strips of cloth.

Pepe tried the crutches again and found them comfortable. 'Gosh Dad, you really fixed them great', cried the boy, smiling at his father with pride. 'Look how well I can walk now!' As he bounded about the dusty patio on his new crutches, his father smiled. 'I'm proud of you, son', he said.

As the health worker was saddling his mule to leave, the whole family came to say goodbye. 'I can't thank you enough', said the father. 'It is so wonderful to see my son able to walk upright. I don't know why I never thought of making crutches myself.' To which the health worker replied, 'It is I who must thank you. You have taught me a great deal.'

As the health worker rode down the trail he smiled to himself. He thought, 'How foolish of me not to have asked for the father's advice in the first place. He knows the trees better than I do, and he is a better craftsman. But how fortunate it was that the crutches which I made broke. The idea for making the crutches was mine, and the father felt bad for not having thought of it himself. But when the crutches which I made broke, he was able to make better ones, and that made us equal again.'

So the health worker learned many things from the father of the crippled boy—things that he had never learnt in college. He learned what kind of wood is best for making crutches, but he also learned how important it is to use the skills

and knowledge of the local people. It is important because in this way a better job can be done, and because it helps preserve the dignity of the people. People feel more equal when they learn from one another.

This is a lesson that the health worker will always remember.

### **Simple ideas for local needs\***

When working with handicapped children and their families it is important never to provide more services, or more care, or to create more dependency, than is absolutely necessary. Let people do the maximum amount for themselves and take the maximum amount of responsibility for their own actions. In therapy, as in learning new skills of any kind, we look for ways of making it fun. We also try to use local resources rather than expensive imported materials.



Photograph by David Werner

These two brothers are unable to stand alone or walk alone because of tremors and lack of muscular control. By making this cart, using for wheels a local wild fruit which children naturally use for making little toys and carts, one child can push the other and hold himself up. The health worker, standing behind, is providing the minimal amount of support necessary, allowing the child to do the maximum amount for himself.

\*The ideas which our health team has been using when working with physically handicapped children have largely come out of conversations with Sophie Levitt.





Photograph by David Werner

Many children with cerebral palsy tend to develop contractures. It is important to encourage them to sit in such a way that the limbs are extended. By putting a pot between the child's legs, the limbs are prevented from coming together. The child is gaining strength by putting things in and out of the pot. Holes in the earth floor help to locate his legs. Other members of the family can easily make their own innovations once they understand the need to avoid contractures and keep the limbs extended.

### **Disabled people as health workers**

Marcello was a small boy who lived in a little mountain village about two hours by mule back from the nearest road. He had difficulty in walking and there was no school in his village, so it was uncertain what his future would be. The health team decided to invite him down to the village where the health centre is and help him attend school. There he could learn to read and write and develop his mental capacities to compensate for his physical handicap. After school Marcello would come to the clinic and help out doing odd jobs. When he finished primary school, at age sixteen, he took the training course for village health workers and is now back in his village serving his people.

One of the things we have come to realise is that handicapped people make exceptional health workers. They have a sympathy for those who are sick or debilitated, because of their own problems. Often, of course, they cannot do the heavy farm work by which most families gain their livelihood. So they really devote themselves to the health work with true commitment. Thus their weakness actually becomes one of their major strengths. In the village programme in Mexico about one third of the community health workers and instructors are handicapped. This was not planned but has come about by a process of natural selection of those most suited to do the job.

Roberto is now one of the co-ordinators of the village health programme. When he first joined, at age fifteen, he was carried in on a stretcher, totally crippled with rheumatoid arthritis. He was unable even to sit up by himself and many of the bones in his hands and feet had already fused. It took more than a year's therapy to get him into a functional state again, and that included chemotherapy, physiotherapy and what is sometimes called psychotherapy but we prefer to call love. In the process Roberto and the village team became very attached to each other and Roberto decided he liked the idea of working to serve the people. He began by helping out around the centre and eventually became one of the leaders and trainers. He also learned to operate the old X-ray machine which was donated to the village programme. Now Roberto has done an apprenticeship at an orthopaedic hospital and has learnt to make simple aids. Because of his own handicap he is especially sensitive to the needs of other disabled people.

### **The CHILD-to-child Programme**

Through the CHILD-to-child Programme\* children can play a positive role in the promotion of health care and the detection of illness and handicapping conditions. For example, older children can carry out tests to measure the eyesight and hearing of the young children coming into school. First of all they play games to understand the importance of good hearing and sight. In one game, a child is blindfolded and the other children try to sneak up and steal stones from a circle around her, without being heard. If she hears someone she points to him and that child has to fall out of the game.

Having been sensitized to hearing, they begin the hearing test. An older child starts saying a series of words, like horse, towel, mouse, etc., first very loud then softer and softer until nobody hears any of the words. Each time one of the small children hears a word she whispers it into the ear of an older companion who writes it in a book. Afterwards the lists are compared and any child with a

\*See Chapter 8.





*Drawing from Helping Health Workers Learn by David Werner and Bill Bower (The Hesperian Foundation, 1982)*

significantly shorter list probably has a hearing problem. So the instrument for measuring and testing hearing is a very delicate one—the children themselves. In the same way, the older children make eye charts to test the younger ones. As they carry out the test they explain what they are doing, pointing out, for example, the importance of doing the test in the open air where the light is good.

Is there any point in carrying out these tests in a remote mountain village where glasses and hearing aids are unobtainable? The answer is yes. With no resources at all you can do something which will make a significant difference to a child's life and development. Many children with marginal hearing or seeing problems don't see what is written on the blackboard or don't hear what the teacher says in school. They begin to think they are less intelligent than the other children, so they hide in the corner of the room where it is even more difficult to see and hear properly, so as to avoid being called on so often. The teacher begins to think the child is dull, and the child develops an image of himself as backward. Once it is recognised that the child is suffering from a minor disability, he can be encouraged to sit at the front and the teacher can take care to speak loudly and write clearly on the blackboard. This can make an enormous difference to the child's development.

Able-bodied children can be taught to understand the problems of disability. One of the games they play, in the CHILD-to-child Programme, is to tie a stick to the leg of an able-bodied child and run races. Of course, the child with the



*Drawing from Helping Health Workers Learn by David Werner and Bill Bower (The Hesperian Foundation, 1982)*

artificial handicap comes last. By taking turns to experience this, and by talking about the problem, the children gain an insight into the difficulties of the handicapped child.

The children also use role-playing as a technique to increase their understanding. For example, the boys all run off to the river for a swim, forgetting the little one on crutches who is left behind. In the next scene they remember the little boy and take him with them. In this way the children learn to think about different ways of relating to the child who is special.

One of the main causes of disability is malnutrition. Bottle feeding of infants, which is still being promoted by large multinational companies, contributes to poor nutrition and in many cases leads to diarrhoea and dehydration. In our CHILD-to-child Programme the students did their own survey about the incidence of diarrhoea and its relation to bottle feeding and breast feeding. They questioned their own mothers about how many times younger brothers and sisters had suffered from diarrhoea in the past year. They found that the incidence was five times greater with bottle fed than with breast fed babies. They also discovered that diarrhoea was the number one cause of death in small children. The children then learned how to make a rehydration mixture, putting sugar and salt into a glass of water according to the measurements.\* By participating in the CHILD-to-child Programme the children learned about the causes of diarrhoea and dehydration and a simple technique for its prevention.

\*See Chapter 2.



# 10. Rehabilitation Within Child Care

**by Sophie Levitt**

*Department of Developmental Paediatrics, Institute of Child Health, University of London*

When considering rehabilitation within child care we look at child rearing practices in the community as a whole, including the role of parents, and we look at all children, both handicapped and non-handicapped. We *observe* the movements which are involved in child rearing, in the natural routines of everyday life, and we *select* those which are appropriate to use with handicapped children. Then, using our expertise in physiotherapy or occupational therapy, we *advise* the parent or guardian how best to help the child.

By combining rehabilitation with everyday child care we gain the following advantages:

1. The parents acquire self-confidence in helping their handicapped child.
2. Time is available to treat the child because posture and movement are being treated while the child is being fed, washed, dressed and toileted.
3. The child learns to be independent in daily activities. This increases the child's self-esteem and releases the parents for other essential activities in the village.

## **Applying rehabilitation techniques in everyday activities**

Activating muscles can take place during feeding, washing, dressing and toileting. For example, feeding can provide a good opportunity for rehabilitation within child care. What happens during feeding? The child is not passive but will always participate in some way. What we do, as therapists, is to look at the child and decide how much participation the parent can demand. The handicapped child is likely to be retarded. He or she may be three years old and still be feeding like a baby. So we look at that particular level of development and build up movements and postures from there. We stimulate the child to feed like an older baby. We expect much more participation; we encourage the child to hold its head up, to sit when supported and to move its arms and hands. This will activate an enormous number of muscles. The child may not manage all the

postural and movement abilities but will participate as far as possible. With daily practice more control will develop until the child reaches a higher level of competence in feeding. This development of posture and movement coincides with emotional, social and mental development.

Therapists can reveal to parents how much their child can do and how much the parent still needs to help. Both child and parent learn to cope with dependency and then make progress towards independence. This process is the same both for handicapped and non-handicapped children. Mothers make demands on their children almost from birth and thereby encourage them to develop.

### **Learning to make demands on the child**

Parents who give birth to a handicapped child may be so upset that they stop parenting. Therefore the first thing to do is to build up their confidence, showing them how to do things, where to begin. They should make demands on the child to stimulate development, but they must be educated to make appropriate demands and to believe in the child's potential, even when performance is not 'one hundred per cent'. It is a question of making the demand at the right level for the child. If the child is handicapped the right level is the one at which he or she is functioning, not necessarily the normal level for the child's age. The parents should start making demands at the child's own level, teaching the child to carry out everyday activities and not doing everything for him or her. Progress can then be made to the next stage of development.

### **Using the expertise of the trained therapist**

To encourage the parents and the child to gain confidence, the therapist must select and show them methods which are simple and easily carried out. The therapist must help parents recognize their child's developmental levels by using the family's knowledge of other young children's movements as seen in the village. Retardation of movements does not necessarily mean lack of intelligence and this should be made clear.

The therapist must consider which simple methods can be effective for which problems. I have had to make special studies of various complicated neuromuscular techniques in order to discover their underlying principles. These principles have then to be translated, wherever possible, into simple methods which can answer such questions as 'How am I going to play with this child?', 'How can this child join a group activity?' or 'What ways can be used to walk this child?'. Some of these simple ideas have been shared with David Werner and his health workers. They have developed them imaginatively to fit the needs of their village in Mexico.\* There are many other simple corrections of posture and

\* See Chapter 9





Photograph: courtesy of the Cheyne Walk Spastics' Centre



Photograph by David Werner

*Physiotherapy procedure to obtain head control, back strengthening, arm stretching and simultaneous action of both arms and hands, a) in the clinic, b) in the home.*

movement which therapists could share with health workers. Therapists should give courses to Third World health workers on basic physiotherapy and occupational therapy ideas.

### **Examples of simple techniques**

Simple methods of treatment can be very effective and I should like to quote four examples:

#### **1. *An under-stimulated child***

A child who is not given adequate stimulation to develop will remain like a baby. Its back may remain rounded like a new-born baby—the so-called 'infantile back'—and the child may be unable to raise its head. Unless there is stimulation the child will not develop and will become immobile to a large extent. Anyone allowed to remain in one position for a long time will become deformed into that position—this is a basic principle of physiotherapy. The way to get the child to exercise muscles and joints is simply to make him or her *want* to move and look around, to reach out and discover things. Try to create a situation, mentally and



Photograph by David Werner

*Older siblings training a younger child to crawl. (Project Piaxtla, Mexico)*



emotionally, which makes the child raise its head and move. This will stimulate the muscles. If one has the time, one can also treat the muscles directly with traditional physiotherapy. But if you create the right situation this is better than any physiotherapy session because the child will do it all day long. For example, you can hang a toy overhead so that the child wants to reach up towards it. By reaching up with his arms the child will lift his head and straighten his back. This is a play situation in which you are also doing physiotherapy. You do not need a physiotherapist, you just need the idea.

## *2. Teaching a child to crawl*

I learned this useful technique from a mother in Harare (Zimbabwe). She used to bring along her baby, wrapped in a blanket, and I would teach him to crawl by crawling alongside with my arm under him. One day she shyly suggested, 'Why don't you use the blanket?'. So we taught the child to crawl by suspending him with the blanket under his stomach. Subsequently, I sent this idea to David Werner in Mexico and our picture shows the technique being used by village children in the Sierra Madre.

## *3. A child with multiple handicaps*

One interesting story concerns a child from the Middle-East, five or six years old, mentally handicapped and spastic, with some abnormal reflexes. The problem was that he would lie in such a way that his hands never came together and he hardly ever moved. He never saw his hands. He never really knew what his body was up to because he was unable to see or feel anything happening. We knew that if the child did not start to bring his hands together, to put his thumb in his mouth and to obtain general motor activity, he would lose a lot of experiences which are essential for basic child development. This child's mother had responded to the problem by doing everything for him. She worked like a slave. So we had to show the mother what the child could do for himself.

The first thing was to stop carrying the child like a babe in arms. By carrying him in a corrective position his arms were made to come together and forward, stretching his bent elbows and his bent legs. The next thing was to teach him to sit and also to do basic movements like rolling over and raising his head. It is worth doing this so that the child may experience new positions that he has never been in before. The technique which we used to encourage this child to raise his head was to get him to grasp a kitchen chair turned upside down. Studies have shown that if you grasp something you have to fix your shoulder and when the shoulder is fixed, the head can fix on the shoulder. Once a child can sit and get head control he can begin to establish eye contact and to communicate with people. This is the beginning of speech therapy.

#### *4. A child who could not sit or stand*

One little African boy had marvellous head control but was unable to sit or stand, so we propped him up in the corner of the room. But when I described this at a local meeting one mother said, 'Oh, there are no corners in our huts'. So we found a cardboard box, put grass in it to make it comfortable and put large stones on the other side so that it was steady. By placing the child in the corner of the box we were able to show him the advantages of sitting: that he could sit and play or sit and eat. An improved version of this idea would be a special chair to put on the floor. Simple appropriate furniture can be made very easily and cheaply. All you need to know is the size of the child and his or her particular problems. The chair is best made in such a way that the child's feet can touch the ground. This is often important because the child needs to use its feet for balancing and it is important psychologically because the child feels safe with both feet on the ground.

#### **Conclusion**

Deformities can be prevented, or to a large degree counteracted, by keeping the child active. If doctors, mothers and health workers are alert to early signs of abnormal motor development in children they can apply basic physiotherapy or occupational therapy ideas in good time and prevent the child from becoming immobile, deformed or discouraged. The more the child moves his or her joints, in as many different patterns as possible, the less they will stiffen up and become deformed. In some cases specific physiotherapy exercises may be necessary, and it is a reversal of the traditional approach that routine daily care activities should take precedence over these. But if the therapist can recognize the corrective and therapeutic aspects of everyday activities then she can develop movement and posture in play situations, in feeding, dressing and toileting, and be sure that the exercises get done. This will relieve family stress and will help the child to develop.



# 11. Rehabilitation: The Need for a Realistic Approach

**by George Wilson**

*Director, The Royal Association for Disability and Rehabilitation (RADAR)*

We must be very careful not to think in ways appropriate to an affluent industrialized society when we consider rehabilitation and employment for disabled people in the Third World. On the basis of my own experience in a developing country, I am convinced that the major priority in dealing with the problem of disability must be prevention. It is the only approach which makes sense in a situation where the incidence of disablement is increasing rapidly. When I worked in Uganda, for example, there were an estimated 30,000 children crippled by polio, in a population which was then nine million. In other words, one in every three hundred people was a child crippled by this one infectious disease. Many others, of all ages, were disabled due to other causes.

We have to remember, at all times, the realities of life in the Third World. We may be speaking of a country where the average total family income is as low as £18 a year, and employment prospects are very poor even for able-bodied people. Then we need to look closely at the problems of the disabled person, not only personally but in the context of the community in which he or she lives. I remember the case of a man who, when he was helped to attain mobility, could no longer make a quite reasonable income through begging. Without an alternative source of income his plight was actually worsened through rehabilitation.

With good intentions, no doubt, western countries have made many mistakes in their efforts to bring help to the Third World. When I went to Uganda as a teacher, for example, we were teaching history lessons about the Wars of the Roses. If this subject had little relevance to the life of the modern British child, how much less relevance it must have had in a country where 118 different tribes had been thrown together and charged with the task of becoming one nation!

The need for a realistic approach is even greater when it comes to thinking about employment possibilities for disabled people. Most western expertise relates to highly industrialized societies, whereas in the Third World we have

predominantly rural communities. In Uganda, four per cent of the workforce was employed in industry and 96 per cent consisted of peasant farmers. Yet western experts were arriving with proposals for schemes which were entirely unsuitable for a rural setting. One suggestion was that we should introduce a three per cent quota system, backed up by legislation, for the employment of disabled people in industry. Another scheme would have involved the provision of training for blind switchboard operators. Then it was discovered that there were only three switchboards in the entire country which were large enough to justify the employment of a blind switchboard operator.

It is not only efforts to transpose ideas from one kind of society to another which fail. Problems can also arise when attempting to translate a good experience from one developing country to another. A classic example is the Ethiopian umbrella factory scheme. Everyone in Ethiopia wants an umbrella for protection, either because it is raining or because the sun is swelteringly hot. Noting this practice, a visiting expert discovered that every umbrella being used was imported. So the government imposed a heavy import duty and a local umbrella factory was set up, which provided a living for up to four hundred disabled people. Obviously, the only country in which an identical scheme could be a success would be one which shared similar conditions, including an attachment to umbrellas. It was hardly surprising, therefore, that an attempt to transfer the idea to East Africa failed completely.

The majority of African countries depend on basic farming. One of the greatest tragedies in modern times has been the rush to the cities and the breakdown of the extended family tradition. Our immediate concern is to help the disabled individual, and perhaps one of the best ways of doing this would be to support cooperative agricultural schemes which can provide a living for every member of the family. An example is described in the next chapter.



# 12. Agriculture for the Blind in Ghana

**by Alan Johns, O.B.E.**

*Deputy Director (Overseas), Royal Commonwealth Society for the Blind*

A group of white-washed buildings with conical grass-thatched roofs, situated on the outskirts of Binaba Village, marks the site of RCSB's Agricultural Rehabilitation Centre for the Blind (ARCB) and the scene of a new approach to rural rehabilitation for blind people in West Africa, pioneered by Christoffel Blindenmission at a similar centre some 50 miles to the east. Binaba is roughly in the centre of Bawku District in north-east Ghana—a tropical savannah region criss-crossed by the tributaries of the Red and White Volta Rivers. Onchocerciasis\* is highly endemic in Bawku District and an estimated 1,250 blind people in a population of 50,000 live in the area served by the ARCB. Blind men being led by young boys are a common sight and in some of the villages, notably Zongoiri, adjacent to the White Volta, more than 15 per cent of the population are blind.

The massive World Health Organization Onchocerciasis Control Programme, a multi-million dollar project financed by the World Bank as well as the United Kingdom, Canada, France, West Germany and the United States, started in this region in 1976. Local subjective assessment of the Programme suggests that it is having an appreciable effect on the number of new cases of onchocerciasis. More accurately, the Dutch ophthalmologist working at the Presbyterian Hospital at Bawku reported in 1980 that the annual transmission rate in the district had been reduced to less than 100. This ophthalmologist is conducting successful experiments with the long-term treatment (10–15 years) of onchocerciasis, through the use of low doses of ivermectin. At the same time, his colleagues in general medicine are developing a primary health programme for the district which includes staff training, village health committees, nutrition education and child health clinics.

\* Onchocerciasis (River Blindness)—an infection caused by tiny worms, carried from person to person by the Black Fly; leads to deterioration of sight and, finally, blindness.



Photograph by Alan Johns

*A blind man making 'sana' matting for sale in the local market.*



The combination of these preventive and curative measures inspires hope that blindness from onchocerciasis and other diseases will be greatly reduced in the future and thus lessen the need for centres like Binaba ARCB. In the meantime, the Centre's training programme and services to blind people and their families, borne of four years' experimentation in devising a method of rehabilitation appropriate to their needs, effectively complement the economic and social development of the area.

Binaba ARCB, with its sub-centre at the village of Zongoiri about ten miles away, has a staff of trained instructors who have organized a variety of courses for over 70 blind men and women. The first wet and dry season crops grown by blind farmers have been harvested, fish ponds alongside the Binaba Dam have been dug and stocked for a fish-farming project and a system of 'animal credits' has been introduced. This is a remarkable achievement when seen against the background of local incredulity to the concept that blind people can play their part in the economic and social affairs of their community.

The essence of Binaba ARCB lies in the use of residential, intensive courses, measured in weeks rather than in months or years, which teach mobility and agricultural and handicraft techniques appropriate to the environment. The courses are followed by a continuous programme of services and further training in blind people's home villages. The important elements are the director and staff of five instructors and the bicycles and other vehicles which facilitate their field work in a radius of about 25 miles. The courses, in which the Centre insists that a sighted member of the blind person's family should also attend, vary in content according to the season. Wet season courses tackle the preparation, planting and harvesting of maize and a plant called kenaf. Dry season courses concentrate on the growing of onions, tomatoes and other market-garden crops. Instruction in the manufacture of rope from the kenaf plant, grass matting (*sana*) and shea butter for cooking oil from the sheanut, are complementary to these courses, in that the products are essential to domestic requirements and find a ready market.

Mention has been made above of 'animal credits'. These are pairs of sheep, goats, ducks and chickens which are reared at the Centre and given to blind farmers on the understanding that, in a set period, the Centre will be repaid in cash or kind. The Centre encourages the development of other self-employment projects by supplying, at cost, ploughs and pairs of bullocks. The writer was present when the first 'bullock palaver' took place between four blind farmers who had already purchased a plough from the Centre and now wanted to tackle ploughing on a contract basis, earning approximately £16 an acre for this service. The palaver was conducted in the shade of a towering mango tree adjacent to the compound of one member of the group and took the age-old course of discussion between prospective members of a co-operative. Should they pay for the bullocks

over three or six years? Who should enjoy the status and the benefits of accommodating them? And so on—but all in a humid temperature of about 41°C, invoking mental mirages of ice cold beer, whilst Isaac, the dignified elder of the group, shifted the weight of his grandson from one knee to another and pulled a faded, grey army blanket tighter round his shoulders. The palaver was to take more than one session but these blind men had just started to harvest their first onions down near the Kakamega Dam and now they were contemplating the next step in a new lease on life. It is too easy to gloss over the poignancy of such a moment.

The digging of wells, importation and sale of donkey-carts, welfare counselling and food distribution, where essential, are other ways in which the Centre, in close daily contact with blind people and their families and actively supported by the Anglican Church of Ghana, is becoming an integral part of community life. Binaba ARCB plans to extend its work to Windenaba, about 25 miles away, and to install a maize grinding mill at Zongoiri to assist the Centre's recurrent costs. Capital and recurrent costs in 1980 were £32,000, jointly financed by the Royal Commonwealth Society for the Blind and the British Government Overseas Development Administration. Recurrent costs, on the assumption of training 120–150 blind people annually, are estimated to be £200 per person.

Inevitably, there are problems: availability of basic commodities and fuel for vehicles, stealing of blind men's crops, depredations of goats and cows on market gardens, the general low level of development in a subsistence farming economy and attitudes of both sighted and blind people. The latter adjust slowly to a more confident role in applying their knowledge and newly-acquired skills. The former, while appreciating the 'spin-off' effects of ARCB, question initially why so much effort should be devoted by external aid agencies to blind, and not sighted, people.

Clearly, the methods used by Binaba ARCB are particularly appropriate to an area in which there is a distressingly high incidence of blindness and where extension work can be reached by bicycle, if necessary. Certain aspects are worthy of consideration, though, in a different setting. Shorter courses enable a greater number to participate, reduce costs and stand less chance of alienating the blind clients from their home background. They also provide a stimulating tempo, often absent in rehabilitation centres requiring full-time attendance for a year or more. Field work provides continuous close contact, an early feedback on training and services and the opportunity of making a significant contribution to rural development, thus emphasising the primary objective of *integration* for blind people in the life of the community.

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# 13. The Disabled Consumer: How Multinational Corporations Affect the Third World

**by Charles Medawar**

*Director, Social Audit Ltd\**

Disability in the Third World is largely a social, political and economic disease—a symptom of underlying conditions of great injustice and inequality. There is endless evidence to support this view but, in the context of a paper on consumers and multinational business, it might be more relevant to quote the statistics produced by two American professors of marketing. Urging multinational corporations to get out there and sell, Professors Lipson and Lamont (1969) observed:

‘The knowledge that five per cent of India’s 520 million population, or 26 million people, have incomes that give them the buying power of the average American should suggest to marketers that it is imperative for them to get in early in India’s industrialization and market development.’<sup>1</sup>

If disability in developing countries is mainly caused by social, political and economic factors, then it could be avoided. For example, we know that there is no absolute shortage of food in the world. But the inequality of its distribution results in approximately 100 million people suffering from malnutrition, with all its disabling consequences. Steps towards reducing this inequality, and the avoidable disability which goes with it, are thwarted by massive ignorance of the Third World and indifference to its problems. A survey by the Ministry of Overseas Development in 1978<sup>2</sup> found that only a minority understood what the term ‘Third World’ meant. As many people thought it referred to UFO’s or space travel as thought it had to do with poverty. This ignorance or indifference is not accidental. It is the product, or at least a by-product, of a society in which personal consumption tends to be focal, driving and irresistible as a way of life. The problem is not only that consumers in the North of the globe tend to be pre-

\* Social Audit Ltd is an independent, non profit-making organization concerned with improving government and corporate responsiveness to the public generally. Its concern applies to all corporations and to any government, whatever its politics.

occupied with their own consumption. It is also that they positively obstruct development in the South because of the extent to which they consume. In this case there can be no doubt that there is a strong causal relationship between one man's meat and another man's poison.

### **Multinational corporations**

Against this background we may ask to what extent it is the multinational corporations themselves that sustain poverty and disability in the Third World, for the effects of the multinational corporations (MNC's) on disabled consumers can be devastating. This may not be intentional, but it is an effect which is so inevitable that it could easily be perceived as deliberate. The damage is done not least because multinationals tend to be very successful, very 'good' at their job.

'They operate within environments where the emphasis in national development and growth is overwhelmingly on the security and prosperity of the relatively wealthy minority. Take, for example, India: If MNC's are mainly concerned about a relationship with five per cent of the population, this leaves the welfare and interests of the remaining 95 per cent at least potentially at risk. Hence the observation made by Emilio Medici, a former President of Brazil, "Brazil is doing well but the people are not." The point here is that multinationals are, to quote the distinguished management theorist John Humble, "superb instruments for *creating* economic wealth, but not for *distributing* it equitably.'" It follows that MNC's are potentially superb instruments also for creating or sustaining inequality.

If multinationals succeed in this, it is a measure both of their economic power and of their related ability to put themselves ahead of the local competition, above criticism and beyond effective control. Briefly developing the last point, there is no international supervision over multinationals at all. Control over MNC's in developing countries tends to be extremely weak, if only because there are no resources to police or monitor what they do. And control by home country governments is generally slight, notably because home governments have a profound vested interest in earning foreign exchange. There is, of course, criticism of the multinationals but, in these circumstances, it is not surprising that it is very easily resisted.

Finally, multinationals, and perhaps in particular in developing countries, are extremely effective in making and marketing goods and in persuading people that these goods bring advantage to them. Some of these products are valuable, others are not, but their impact in a developing country will depend largely on what they are used for and by whom. The archetypal example of precisely the effect that one wants to avoid is the poor family



trading their chickens' eggs—probably their major source of protein—for bottles of Coke.’<sup>3</sup>

### **The multinational pharmaceutical industry in the Third World**

The multinational pharmaceutical industry represents concentrated capacity and wealth. Just ten companies control one-quarter of the world's total drug production, while the top 110 companies control 90 per cent of the total. By contrast, the average developing country represents concentrated incapacity and ill-health. This is how the situation was described in a 1972 paper by the UK industry backed Office of Health Economics:

‘Private sector expenditure on health frequently accounts for between one-half and three quarters of total health expenditure in a developing country, nearly all of which buys personal curative services which benefit only a tiny rich minority of the population . . .’

‘Although the provision of curative services in these areas may do much to alleviate individuals' suffering, it can do little alone, given the resources available, to reduce the overall incidence of disease. Whilst there is a constant risk of infection and re-infection from a multiplicity of hazards, costly individual treatments are of little long-term value. Indeed, if money which could be spent on improving sanitation, water supplies and nutritional standards is devoted instead to curative health services, the long-term effect could very easily be detrimental to the physical well-being of the population.’<sup>4</sup>

The point here is that in such deprived environments, supplying even the most useful drugs amounts to putting the proverbial cart before the horse. In spite of this, the proportion of the total health budget in a developing country that is spent on drugs is typically around 50 per cent, five or six times the proportion spent by the National Health Service in Britain.

This distortion of national health priorities in developing countries, and it can be taken for granted that it reflects vigorous promotion by the multinationals concerned, is underlined by the fact that most of the drugs bought and sold are not ‘essential’, within the meaning used by the World Health Organization or otherwise. The WHO lists some 200 ‘essential’ drugs, but in the average developing country 3,000–4,000 products might be available. Many of them, my guess would be around one-half, are not only not essential, they are positively undesirable on pharmacological grounds alone. If cost is taken into account, as in a developing country it is bound to be, the proportion of undesirable preparations is higher still. The reason relates both to the absolute and the relative cost of drugs. For example, if all hypertensive patients in Tanzania were treated with methyldopa, the annual cost would be eight times the total annual drug

expenditure of the Ministry of Health<sup>5</sup>. In these circumstances the use of cheaper, near equivalent drugs seems compelling.

So far as relative cost is concerned, the main point of contrast is between branded, proprietary products and their generic equivalents. In Sri Lanka, for example, comparison of the prices of 35 imported drugs before and after the takeover of drug purchasing by the State Pharmaceuticals Corporation in 1972, showed that private sector prices were on average twice as high as the prices paid by SPC. The difference in quality of the drugs obtained was reportedly not significant, despite some examples of very high variations in price, (e.g. Roche's price for diazepam tablets was 100 times higher than the alternative supplier's price; CIBA's price for phenylbutazone tablets was 20 times higher; and Hoechst's price for tolbutamide was 12 times higher than the alternative supplier's price.<sup>6</sup>)

There is one other point worth mentioning, to complete this miserable picture. Multinational drug companies typically observe very much lower standards in developing countries than they would do elsewhere, for example in the drugs they provide and in the warnings they don't. The companies concerned usually try to justify this by saying that they obey the law in the countries in which they operate. Sometimes this means that the companies don't break laws which don't exist. And sometimes there is a law but, as the companies themselves know perfectly well, its requirements are far too low, considering the needs of physicians and patients alike.

I now want to put these remarks in perspective by referring to one particular multinational company, G. D. Searle, and to one of its products, Lomotil.

### **Lomotil and Searle**

Lomotil is a useful example to consider, for two main reasons. First, although not an essential drug it is pharmacologically perfectly reputable. It represents a clear improvement on the estimated 75 per cent of anti-diarrhoeal drugs in the typical developing country drug list whose use could not reasonably be defended on pharmacological grounds. Secondly, the case of Lomotil demonstrates the need for different technologies in the North and South, and also shows up something of the gulf between rich and poor. Lomotil is an anti-diarrhoeal drug: it doesn't treat the condition which caused the diarrhoea in the first place, but it is an effective chemical plug. It stops the diarrhoea coming out. So, in the developed countries of the North, Lomotil does have its uses, because here diarrhoea is essentially a social disease and no more than an inconvenience. In developing countries, by contrast, diarrhoea is frequently life-threatening because of the generally very poor state of health and level of malnutrition. In developing countries diarrhoea is *the* major cause of death in children aged under three. Now



it is perfectly acceptable, though medically probably quite unnecessary, to use Lomotil to treat a relatively mild attack of diarrhoea in an otherwise fit adult. But it is not acceptable to treat even a fit child in the same way, for the following reasons:

1. Diarrhoea is a natural defence mechanism (like sneezing) by which the body rids itself of unwanted elements.
2. The only essential treatment for diarrhoea—and in developing countries especially it may be fatal not to give it—is rehydration\*. Diarrhoea dehydrates and the body has to be rehydrated, or topped up, with a weak electrolyte (sugar/salt) solution to avoid serious complications.
3. Children vary markedly in their response to different drugs and because Lomotil is a very powerful drug it is potentially dangerous in children. The danger in carefully controlled and supervised use is probably relatively small but because there are better, safer and cheaper alternatives, the risk is generally considered unacceptably high.

It was for these reasons that the World Health Organization, very unusually identifying a product by brand name, described Lomotil as being of 'no value' in the treatment of diarrhoea. And it was because of the potential danger to children that the U.S. Food and Drug Administration decided, in 1973, to require that Lomotil be contra-indicated for use in children aged under two.

In Spring 1981, Social Audit published a leaflet which describes the limitations of Lomotil and also drew attention to the fact that the manufacturers, G. D. Searle, were promoting it in developing countries for use in the treatment of infants from birth (3 kg). Publication of the leaflet marked the beginning of four months of fairly intense negotiations between Social Audit and Searle. From these negotiations it emerged that:

1. Searle's representatives either seriously misunderstood, or seriously misrepresented, the scientific evidence they offered to support the use of Lomotil in the treatment of infants under two. The evidence itself was very largely scientifically unacceptable, though several crucial studies had been approved and supported by Searle.
2. Regardless of its scientific merit, the evidence relied on by Searle, like much of the evidence relied on by other pharmaceutical companies, was largely irrelevant. Searle's evidence related to the supervised use of Lomotil in hospitals, where patients were closely monitored, carefully pre-screened and also given rehydration and other therapy as needed. However, in developing countries hospital treatment is relatively rare, prescription drugs are freely available and widely used for self-medication and no instructions are supplied for users. It therefore seems likely that many would fail to

\* See Chapter 2

appreciate the need for rehydration and would not understand that Lomotil gave only symptomatic relief.

Searle's representatives eventually withdrew from the exchange, having undertaken to relabel the prescribing instructions for Lomotil all over the world. In future Lomotil will no longer be recommended for use in infants under two years of age. A full account of the negotiations with Searle has been published by Social Audit.<sup>7</sup>

## Conclusion

Immediately before World War II, one half of the people in Britain were officially classified as malnourished: their diet was deficient for health. There was also extensive and gross social inequality, comparable perhaps with the inequalities that exist in the world today, both within developing countries and between rich nations and poor ones.

There was one particular survey in 1935 which compared the heights and weights of boys from a public school with their age-matched counterparts at a council school. On average, it was found that the public-school children weighed about a stone more and were three inches taller than the boys from the council school. In those days, you literally looked up to, or down on, a person from a higher or lower social class, and perhaps that is still the nub of the problem in the world today. We look down on people who are disabled consumers and, with very little justification, we expect them to look up to us.

Britain first began to take *popular* national development seriously during World War II, perhaps partly to get it fought. Because there was food rationing (which guaranteed fair distribution) and because there was subsidy for, and fortification of, essential foods, by the end of the War, rickets (which is caused by a deficiency of vitamin D) had been virtually eliminated.

Optimists will marvel at what can be achieved almost overnight. Pessimists will note that it took a war to achieve it.

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# 14. World Disability: The Need for a New Approach

**by Norman Acton**

*Secretary General, Rehabilitation International\**

In recent years my colleagues and I have had numerous opportunities to observe the situation of disabled people in some of the least developed parts of the world, both in remote rural areas and in the shadows of some of the world's largest cities. Our experiences have led us to reconsider our response to disability in the Third World and to re-think our priorities.

There seem to be four main obstacles that impede our efforts to improve the situation of disabled people in developing countries. They are poverty, ignorance, misconceptions and faulty priorities.

## **Poverty**

The combination of poverty and disability is a fearsome one. Either one may cause the other, and their presence in combination has a tremendous capacity to destroy the lives of people with impairments and to impose on their families burdens that are too crushing to bear. In our planning, we have not recognized the interactions between these two forces: the frequency with which untreated impairment starts or accelerates the collapse of a family's already fragile economic base, and the degree to which social and economic deprivation are themselves fundamental causes of impairment and of consequent life-long incapacity. Because we have not faced up to the evidence in the villages, the barrios and the favelas, we have not recognized that services to prevent impairment and assist disabled people are essential components of economic and social development.

In 1978, more than 60 per cent of the world's population lived in countries with a per capita gross national product of less than US\$700. One-third of those

\* Rehabilitation International is a world federation of national disability organizations. A recent study carried out by Rehabilitation International for UNICEF, the United Nations Children's Fund, has led to the establishment of a joint RI/UNICEF Technical Support Programme which is managed by Rehabilitation International.



Photograph by Speiser (UNICEF)

*A shanty built of palm is home for Jesus and Maria del Carmen. Without water or sanitation, and offering little protection from the intense heat or chilling fog, it is a fine breeding place for disease (Lima, Peru)*



those people—some 780 million—were believed to be living in absolute poverty. The relentless interaction between their economic plight and the onset of disability ensures that those numbers are increasing not only at the pace of population growth, but faster. This trend is a serious impediment to all facets of development.

When the benefits of development do begin to reach the people, it is frequently the case that those who are affected by disability are the last to receive assistance. The family with a disabled member is often pushed to the margins of the community, beyond the reach of new health or education facilities. Within the family, it is often the member with a disability who is denied the services, the training or education, the improved nutrition or the stimulation he or she may require in order to become capable of overcoming the limitations of the disability. With distressing frequency, people with disabilities are observed to be the least advantaged humans in disadvantaged populations.

### **Ignorance**

The ignorance of which I speak is more than an absence of information and education. It also includes an appalling array of misinformation, prejudice, superstition and fear. This multi-dimensional form of ignorance is to be found at all levels of society. It plays a major role in the occurrence of impairment; it causes the escalation of impairment into permanent disability; and it is the very basis of the social disadvantages which constitute a handicap. Such ignorance paralyses the will of the individual who is affected. It is a major factor in the family's inadequate reaction to the problem. It is a fundamental reason for the community's ostracizing individuals and families affected by impairment. It exists in the institutions and professions that might be helping, but usually are not: the health centre, the school, the religious grouping, the community development programme, the doctor, the teacher, the social worker. It permeates all echelons of government from the village chief to the ministers of health, education and social welfare. And it is endemic among the representatives of international and other organizations who are advising on priorities for development and who are administering international aid. This lack of understanding of the real issues reinforces the traditional distorted concepts of disability which flourish throughout the world, and does much to conceal the real magnitude of the problem and to confuse everyone's thinking about the solutions.

### **Misconceptions**

Throughout the world the conceptual foundations upon which our response to disability is based are inconsistent with reality. They have evolved from outdated traditions and stereotypes. I find three misconceptions to be particularly

significant.

The first has to do with which people we are speaking of when we talk of 'the disabled'. Traditionally we have meant people with conspicuous orthopaedic or neurological impairments, people whose mental instabilities have led to evident antisocial behaviour and people with severely impaired vision. These are the ones whom history has stereotyped as the crippled, the demented and the blind. Their symbols have been the wheel-chair, the crutch, the asylum, the white cane. Legislation, organizations and services have been developed around the needs of these groups and, even though the requirements of people with other forms of impairment are being recognized, our conceptual base remains to a degree circumscribed by these traditional images.

This inconsistency has become especially vivid in the industrialized countries where, according to a recent World Health Organization expert committee, the most important causes of impairment and disability are in fact chronic somatic diseases (e.g. rheumatism), pulmonary and psychiatric illnesses, genetically induced factors, and chronic pain, followed by accidents and drug and alcohol abuse. As the capability of health services to prolong life increases it becomes daily more evident that, if we live long enough, each of us will eventually become disabled.

The same WHO committee found that, in the developing countries, about 70 per cent of all disability is caused by four factors: malnutrition, communicable diseases, deficient perinatal care and accidents. The impact is heavily concentrated on children and the consequences are either lifelong disability or early death. The lassitude and inertia observed among poverty-stricken people are often products of disabling conditions such as malnutrition, endemic disease and infection. There may be serious impairment of both physical and mental development. Yet people affected in this way are rarely included in our statistics about disability or in our programmes to provide preventive and rehabilitative services.

Thus, in both the industrialized countries and in the developing areas there are large numbers of people who, from a practical point of view, suffer serious impairments and disabilities even though their diagnoses do not place them in the traditional categories of disability.

The second misconception has to do with the numbers of people who are affected. This obviously will vary with the definitions being used and the diagnostic groups being included, but the fact is that the numbers of people affected are nearly always larger than we assume. If we look at Asia, where 55 per cent of all people live, we may estimate that there are some 230 million disabled people. By the year 2000 that number will have increased to 330 million. In the region where those hundreds of millions of people live we may count the client capacity of rehabilitation facilities in the hundreds in some countries, at best in



the thousands. The programmes that we have started and assisted in the developing countries are, almost without exception, designed to assist small and restricted groups of people. Only rarely does one find a project that has been planned with any attention to the overall size of the problem.

The third misconception has to do with the kinds of action we believe should be taken. Since we have perceived disability as being primarily a problem of the individual who is impaired, we have seen the solution as being to eliminate, reduce or compensate for the impairment. We have formed a rehabilitation model—and used it in most of our international aid activity—with three working parts: fancy buildings, elaborate equipment and highly specialized professional staff. Standards have been evolved for each of these components in sophisticated settings with adequate funds for research and development, and those standards have been cloaked in a sacred aura so that people in the developing countries are led to believe that anything different is unacceptable.

It has been our practice to lift both the problem, and the person with the problem, out of the social context in which they exist and to attempt to impose a solution in a new context of our own making. Few of our programmes in the less developed areas take account of the social and environmental factors which contribute to the process of impairment, disability and handicap. And they ignore the possibilities of remedy that may be found in the family, in the community and in the disabled individual himself.

### **Faulty priorities**

In addition to the problems associated with poverty, ignorance and misconceptions I believe that most of our planning and action has been directed with faulty priorities. This can be observed at every level, from the design of global development campaigns by the United Nations, the World Bank and others, to the techniques we encourage for responding to individual cases in the village. For example, immunization against communicable diseases is one of the least expensive ways to reduce the incidence of impairment in the developing countries. For years the World Health Organization has had its Expanded Programme of Immunization and has been ready to assist governments in mounting immunization campaigns. But few have taken full advantage of the scheme and recent reports show that, even in countries that have entered the programme with vigour, coverage is rarely up to 30 per cent of the child population, and in most it is much lower than that.

Another example of faulty priorities can be seen in the assistance given to developing countries. With few exceptions this is heavily weighted towards buildings, equipment and specialized training to deal with traditional categories

of impairment. Centres for medical rehabilitation and for special education are the usual objectives. They will assist a few people in the immediate vicinity of the centres but in so doing will consume resources that could have supported actions to reach thousands of people in their own communities.

### **A third world within the Third World**

At a conference of Rehabilitation International, Justice Krishna Iyer of the Indian Supreme Court stated that disabled people make up a third world within the Third World. I would like to claim that, within this third world of the Third World, we find three distinct groups of disabled people.

In the first group we find people who are impaired and/or disabled, but not handicapped. Thanks to many combinations of personal capacity, family efforts, advantageous environmental situations, social and psychological factors, and other considerations we do not yet understand, these are people who, despite serious impairments, function well in the community. They are not disadvantaged, they do not call for special services, and they do not appear in our statistics.

We can locate the next group through the service chains of aid agencies. For the most part we find, after working down the service chain, that we are being introduced to selected individuals whose problems fall into the traditional categories of disablement, those for whom the existing programmes have been designed. We will probably find that the numbers of people needing help are larger than the existing facilities can serve but we rarely get any suggestion that the problem is a statistically significant one. The probable conclusion is that the requirement is to support more and better of the kinds of services being offered by the existing network. Most of the reports we have on the situation in developing countries are based on this type of investigation and end with these kinds of recommendations.

Finally when we go out to the villages, or spend time in the urban slums, we find the people in the third group—the ones with the greatest difficulties and the least help. We find that, for the most part, the kind of help they need simply does not exist. Where it does exist we learn of many kinds of barriers that separate disabled people from the services they need: physical barriers of distance and transport, economic barriers and social barriers of class, custom and tradition. We find people who have sought help and been given the wrong treatment, others who have simply been turned away. It is here that we find the most distinct evidence of the obstacles I have presented to you. And it is here that we find tangible confirmation that the numbers of affected people are much larger than we have supposed or planned for.



### **The need for a new approach**

The obstacles I have identified are poverty, ignorance, misconceptions and faulty priorities. It doesn't do much good to explain these to the people in the village, to the district officers for health or welfare, or even to the responsible officials in the capital cities. These obstacles define the challenge for those of us who are trying to plan a more useful range of action at the international level. If we are realistic, we must accept that we will not eliminate any of these barriers quickly or completely. Once we have understood them, however, and once we make our awareness of them a central factor in our thinking about solutions, then we can begin to develop a new approach to the problems.



Photograph by Norman Potter, courtesy of The Leonard Cheshire Foundation

*A young trainee constructs a new wheelchair in a sheltered workshop and learns the skills he needs to become independent. (Manila, Philippines)*



# 15. The Charter for the 1980's

**by The Rt. Hon. Alfred Morris, M.P.\***

*Shadow Minister for the Disabled*

Let no one say that resources are not available for the achievement of a better life for the world's disabled people. The truth is that too much is spent on the munitions of war and too little on those of peace. If only one per cent of what is now spent on weapons of destruction were used to prevent disability and to rehabilitate disabled people, the lot of the disabled in the Third World could quickly be transformed.

Fifteen out of every hundred children born in the Third World this year will die before their first birthday. One-quarter of the rest will suffer from deficiency diseases and three-quarters will lack any kind of modern medical care. Millions of people will become blind and many others will become deaf *and* blind from preventable causes.

The International Year of Disabled People drew attention to the problems and needs of disabled people and their families. But what about the years beyond? All of us involved in IYDP wanted it to be more than a 365-day wonder. This is why we set targets for the future.

The Charter for the 1980's, the work of a committee whose members were drawn from both rich and poor countries, has four main aims:

- ★to prevent as many people as possible from becoming disabled,
- ★to reduce the handicapping effects of disability by providing rehabilitation services,
- ★to ensure that disabled people are enabled to participate fully in the life of their communities,
- ★to make the public aware of the problems of disabled people and their right to social equality.

\* The Rt. Hon. Alfred Morris, M.P., who was Britain's first Minister for the Disabled, from 1974 to 1979, chaired the World Planning Group set up by Rehabilitation International to draw up the Charter for the 1980's.

Every country was urged to adopt an action plan to achieve these aims by the end of the decade. The aims cover all aspects of national life and involve every agency, statutory and voluntary, which can make life better for disabled people.

The Charter emphasises that disabled people should be cared for in the community rather than in institutions. It calls on all nations to ensure that, wherever possible, disabled people are helped to live at home as fully integrated members of their local communities.

All the Charter's aims are deeply important but none more so than prevention. The most pressing need is to extend primary health care to all communities and to step up our assault on the six major diseases of childhood: measles, tetanus, tuberculosis, diphtheria, whooping cough and poliomyelitis. With international co-operation, poliomyelitis could be completely eradicated by the end of the decade.

The kind of society the Charter seeks is one where there is not pity but genuine respect for disabled people; where understanding is unostentatious and sincere; where it is the abilities of people, not their disabilities, that really count; and where disabled people have a fundamental right both to full citizenship and social equality.

*Anthony Morris.*



## THE CHARTER FOR THE 1980's\*—SUMMARY DECLARATION

More than five hundred million people are disabled in the world today.

More than three hundred and fifty million people with disabilities live without the help they need to enjoy a full life. By far the greatest number live in areas at early stages of economic development.

An estimated twenty-five per cent of the members of any community are prevented by the existence of disability from the full expression of their capacities. This includes not only people who are disabled but also their families and others who assist and support them.

Throughout history humanity has erected barriers, both physical and social, which exclude from full participation in its communities those judged to be different because of physical or mental variation. The knowledge and skills now exist to enable each country to remove these barriers.

Poverty and war not only cause disability but also affect the availability of resources for its prevention and rehabilitation. The aims of this Charter require for their fulfilment, therefore, a more equitable distribution of the world's resources and relations between nations that are based on reason and co-operation.

In this decade it must be the goal of all nations to reduce the incidence of disability and to evolve societies which will respect the rights of persons with disabilities and welcome their full participation. For these purposes this Charter for the 1980's is promulgated. Its aims can be achieved only when there is a basic modification of each society's attitudes toward disability and of its response to the problem of handicapped people. The aims are:

- \* To launch in each nation a programme to prevent as many impairments as possible and to ensure that the necessary preventive services reach every family and every person.
- \* To make certain that every person with a disability, and every family which includes a member with a disability, receives whatever rehabilitation services and other support and assistance may be needed to reduce the handicapping effects of disability and to make possible for each person a full life and a constructive role in society.
- \* To take all necessary steps to ensure the fullest possible integration of, and equal participation by, people with disabilities in all aspects of the life of their communities.
- \* To disseminate information about people with disabilities and their potential, and about disability, its prevention and treatment, so as to increase public knowledge and awareness of these problems and of their importance to every society.

Each country is urged to prepare a comprehensive national plan for the achievement of these aims in the light of the principles enunciated in this Charter and of its own circumstances.

The Charter for the 1980's is a statement of consensus about measures to enable humanity to protect and nourish the rights and responsibilities of every person, those who are called disabled and those who are not. The Charter has been approved by the Assembly of Rehabilitation International at its 14th World Congress in June 1980.

\* The Charter for the 1980's has been presented to Heads of Government throughout the world. It calls on them to draw up an action plan to implement its proposals. Copies of the full length version of the Charter are available, price 30p including postage, from RADAR, 25 Mortimer Street, London W1N 8AB.





# Further Reading

## Child Health and Disability

- \*A. Aarons, H. Hawes, J. Gayton, *CHILD-to-child*, Macmillan 1979, (£1.95). Shows how older children can help in the health and development of younger children. Also free newsletter and activity sheets available.
- CHILD-to-child Programme (ed), *The Refugee Child in the CHILD-to-child Programme*, CHILD-to-child Programme, 1983, (Free); from CHILD-to-child, c/o Institute of Child Health, 30 Guilford Street, London WC1N 1EN.
- \*G. J. Ebrahim, *A Handbook of Tropical Paediatrics*, ELBS and Macmillan, 1978, (£0.80).
- \*G. J. Ebrahim, *Breast Feeding, The Biological Option*, ELBS and Macmillan, 1978, (£0.75).
- \*G. J. Ebrahim, *Care of the Newborn in Developing Countries*, ELBS and Macmillan, 1978, (£0.90).
- \*G. J. Ebrahim, *Child Care in the Tropics*, ELBS and Macmillan, 1978, (£0.80).
- \*G. J. Ebrahim, *Paediatric Practice in Developing Countries*, Macmillan, 1981, (£6.00). Guide to providing a comprehensive child care service at district level.
- \*G. J. Ebrahim, *Practical Mother and Child Health in Developing Countries*, ELBS and Macmillan, 1978, (£0.85).
- \*M. & F. King, *Primary Child Care*, Oxford University Press, 1978, (£3.00). A comprehensive illustrated manual of child care in simple language. Matching slide set available.
- \*M. & F. King, *Primary Child Care Book Two: A Guide for the Community Leader, Manager and Teacher*, Oxford University Press, 1979, (£3.95). Contains 3,000 multiple-choice questions. Teaching kit also available.
- \*D. C. Morley, *Paediatric Priorities in the Developing World*, Butterworth, 1973, (£4.95). Alternative priorities to those suggested by traditional paediatricians.
- \*D. C. Morley & M. Woodland, *See How They Grow*, Macmillan, 1979, (£1.50). Designed to follow *Paediatric Priorities in the Developing World*; emphasises the importance of the growth chart.

\* Titles marked with an asterisk are available from TALC (Teaching Aids at Low Cost), P.O. Box 49, St. Albans, Herts. AL1 4AX. Tel: (0727) 53869. In addition to prices quoted, the cost of postage and packing (UK second class or overseas surface mail) should be added. For orders under £4.00 add £1.50, for orders over £4.00 add 30 per cent of total cost of order.

UNICEF (ed), *Assignment Children 53/54. The Disabled Child: A New Approach to Prevention and Rehabilitation*, UNICEF, 1981, (F.Fr.46); from Assignment Children, Villa le Bocage, Palais des Nations, 1211, Geneva 10, Switzerland.

### **Practical Guides: Health and Disability**

\*AHRTAG (ed), *How to Make Hand Grips*, AHRTAG, 1980, (Free). Explains how hand grips can help disabled people hold tools, brushes etc.

\*A. Battersby, *How To Look After a Health Centre Store*, AHRTAG, 1983, (£3.00). Covers building, layout, equipment and managing supplies.

\*S. G. Browne, *The Diagnosis and Management of Early Leprosy*, The Leprosy Mission, revised edition 1979, (Free).

S. G. Browne, *Memorandum on Leprosy Control*, The Leprosy Mission, revised edition 1980, (Free); from The Leprosy Mission, 50 Portland Place, London W1N 3DG.

S. Cairncross & R. Feachem, *Environmental Health Engineering in the Tropics*, John Wiley, 1983, (£6.95).

\*D. Caston & J. Thompson, *Low Cost Aids*, AHRTAG, 1982, (£2.00). Shows a wide range of aids for disabled children, mainly pictorial.

\*D. Caston & J. Thompson, *Low Cost Physiotherapy Aids*, AHRTAG, 1983, (£1.00). Concentrates mainly on exercisers for hands and feet.

\*Christian Medical Committee (ed), *Principles and Practice of Primary Health Care*, World Council of Churches, Geneva, 1979, (£1.00).

\*T. Drummond, *Using the Method of Paulo Freire in Nutrition Education*, Cornell University, 1975, (£1.00). Excellent account of adult literacy and nutrition programmes in north-east Brazil.

\*R. England, S. W. Eaves, et al, *How to Make Basic Hospital Equipment*, Intermediate Technology Publications, 1979, (£2.95). Designs for low-cost equipment made from locally available materials.

\*J. Elford, *How To Look After a Refrigerator*, AHRTAG, 1980, (£2.00). Simple illustrated guide.

R. Feachem, M. McGarry & D. Mara, *Water, Wastes and Health in Hot Climates*, John Wiley, 1977, (£21.70).

D. Fichtner, *How to Raise a Blind Child*, Christoffel Blindenmission, 1979, (D.M. 5.50). Illustrated guide (in English) for parents of blind children and those who work with blind pre-school children; from Christoffel Blindenmission, Nibelungenstrasse 124. D-6140 Bensheim 4, West Germany.

R. L. Huckstep, *Poliomyelitis: A Guide for Developing Countries*, Churchill Livingstone, 1975, (£4.75). Includes discussion of appliances and rehabilitation for the disabled.



Human Health Committee (ed), *A Barefoot Doctor's Manual*, Routledge & Kegan Paul, 1978, (£5.95). Prepared by Chinese paramedics.

\*M. King et al, *Nutrition for Developing Countries*, Oxford University Press, 1972, (£2.50). Written in simple English, with exercises which can be undertaken in the community.

\*J. Koppert, *Nutrition Rehabilitation*, Tri-Med Books, 1977, (£1.00). Guide to appropriate and cost-effective management of malnutrition.

\*E. Millner (ed), *Primary Health Care in Developing Countries: A Guide to Resources in the UK*, AHRTAG, 1982, (£1.80).

Population Information Programme (ed), *Oral Rehydration Therapy (ORT) for Childhood Diarrhoea*, Population Information Programme, (Free); from Population Information Programme, Johns Hopkins University, Baltimore, Maryland 21205, USA.

W. H. Topling, *Handbook of Leprosy*, Heinemann, 1978, (£3.75).

\*D. Werner & B. Bower, *Helping Health Workers Learn*, The Hesperian Foundation, 1982, (£4.50).

\*D. Werner, *Where There is No Doctor*, Macmillan, 1979, (£3.95). This highly practical and fully illustrated guide is essential reading for those developing village programmes.

\*WHO (ed), *Recognise the Disease*, WHO, Geneva, 1979, (£0.12). An 80 × 30 cm folder with excellent coloured illustrations of the six preventable diseases which are targets of the Expanded Programme on Immunization.

### Health and Disability Issues

D. Bull, *A Growing Problem: Pesticides and the Third World Poor*, Oxfam, 1982, (£4.95). Thorough investigation into the alarming effects of pesticides in the Third World, concludes with a series of practical proposals for action; from Oxfam, 274 Banbury Road, Oxford OX2 7DZ.

Campaign Against Depo-Provera (ed), *Depo-Provera: a Report*, Campaign Against Depo-Provera, 1981, (£1.50). Sets out the objections to this injected contraceptive; from Campaign Against Depo-Provera, 374 Grays Inn Road, London WC1.

A. Chetley, *The Baby Killer Scandal*, War on Want, 1979, (£1.50). An investigation into the effects of the promotion and sale of powdered baby milks in the Third World; from War on Want, 467 Caledonian Road, London N7 9BE.

L. Doyal with I. Pennell, *The Political Economy of Health*, Pluto, 1979, (£4.95). Study of health issues at home and abroad in their political, economic and historical context.

S. George, *How the Other Half Dies*, Pelican, 1976, (£1.75). Considers the real reasons for world hunger in terms of power over food production and distribution.

J. Grant, *The State of the World's Children 1982-83*, Oxford University Press, 1983, (£2.95). Review by the Executive Director of UNICEF. Draws attention to widespread 'invisible malnutrition' and discusses nutrition, immunization, promotion of breast feeding, oral rehydration therapy and use of growth charts.

\*D. R. Gwatkin, J. R. Wilcox & J. Wray, *Can Health and Nutrition Interventions Make a Difference?*, US Overseas Development Council, 1980, (£1.50). An analysis of ten programmes; suggests we know how to cut child mortality by half with present resources.

T. Hayter, *The Creation of World Poverty: An Alternative View to the Brandt Report*, Pluto, 1981, (£2.50). Challenges the assumption that the West, through its aid agencies, is 'helping' the rest of the world to develop. Shows that an economic system of fundamental inequality has been established.

T. Heller, *Poor Health, Rich Profits*, Spokesman, 1977, (£1.25). The structure and history of the drug industry's involvement in the Third World.

I. Illich, *Limits to Medicine—Medical Nemesis: the Expropriation of Health*, Pelican, 1976, (£1.50). Argues that modern medical techniques are not just ineffective but often physically harmful.

B. Mass, *Population Target*, Zed, 1976, (£4.50). Examines the assumptions behind population programmes; includes case studies from Latin America.

C. Medawar & B. Freese, *Drug Diplomacy*, Social Audit, 1982, (£3.95). Case study of a drug, a multinational company and a pressure group; from Social Audit, P.O. Box 111, London NW1 8XG.

C. Medawar, *Drug Disinformation*, Social Audit, 1982, (£3.00). What British and multinational drug companies tell doctors about their products, at home and abroad; from Social Audit, P.O. Box 111, London NW1 8XG.

\*C. Medawar, *Insult or Injury?*, Social Audit, 1979, (£2.00). Third World marketing of food and drugs—an indictment.

D. Melrose, *Bitter Pills: Medicines and the Third World Poor*, Oxfam, 1982, (£4.95). Examines the background to illness in poor countries and the obstacles to good health. Gives practical proposals including better control of the marketing of drugs; from Oxfam, 274 Banbury Road, Oxford OX2 7DZ.

D. Melrose, *The Great Health Robbery*, Oxfam, 1981, (£1.30). A study of the promotion of baby milk and medicines in the Yemen and a look at a working alternative; from Oxfam, 274 Banbury Road, Oxford OX2 7DZ.

A. Moyes, *One in Ten: Disability and the Very Poor*, Oxfam, 1981, (£1.10). Examines the causes of world disability and what can be done about it, many case studies; from Oxfam, 274 Banbury Road, Oxford OX2 7DZ.

M. Muller, *The Health of Nations: A North-South Investigation*, Faber, 1982, (£3.95). Challenges the behaviour of western drugs companies in the Third World and sets out a blueprint for world health in the future.



M. Muller, *Tobacco and the Third World: Tomorrow's Epidemic?*, War on Want, 1978, (£1.20). An investigation into the production, promotion and use of tobacco in developing countries; from War on Want, 467 Caledonian Road, London N7 9BE.

Politics of Health Group (ed), *Food and Profit—It Makes You Sick*, Politics of Health Group (POHG), 1980, (£0.50). Ill-health as a consequence both of *what* food is produced and *how* it is produced; from Politics of Health Group, 9 Poland Street, London W1V 3DG.

\*G. Roberts, *Questioning Development*, The Alver Press, 1974, (£0.80). Notes for volunteers and others concerned with the theory and practice of change.

Third World First (ed), *Health Links*, Third World First, 1982, (£0.85). Articles on health, medicine and underdevelopment; from Third World First, 232 Cowley Road, Oxford OX4 1UH.

D. Weir & M. Schapiro, *Circle of Poison: Pesticides and People in a Hungry World*, IFDP, 1981, (£2.50). Documents the international marketing of restricted pesticides; from Third World First, 232 Cowley Road, Oxford OX4 1UH.

WHO (ed), *Disability Prevention and Rehabilitation: World Health Organization Technical Report Series 668*, WHO, 1981. Report of the WHO expert committee on disability prevention and rehabilitation; from HMSO or WHO, Geneva, Switzerland.

WHO (ed), *Health: A Time For Justice—Primary Health Care*, World Health Organization, 1978, (Free). Useful introduction to the concept of primary health care; from HMSO or WHO, Geneva, Switzerland.

Sir John Wilson (ed), *Disability Prevention: The Global Challenge*, Oxford University Press, 1983, (£9.95). Up-to-date views on prevention from some of the world's leading experts.

Sir John Wilson (ed), *World Blindness and its Prevention*, Oxford Medical Publications, 1980, (£12.50).



# Useful Addresses

**African Medical and Research Foundation (AMREF).** London House, 68 Upper Richmond Road, London SW15 2RP. Tel: 01-874 0098.

**British Red Cross Society.** International Division, 9 Grosvenor Crescent, London SW1X 7EJ. Tel: 01-235 5454.

**CHILD-to-child Programme.** Institute of Child Health, 30 Guilford Street, London WC1N 1EH. Tel: 01-242 9789.

**The Hesperian Foundation.** P.O. Box 1692, Palo Alto, California 94302, U.S.A.

**International Child Health Unit, University of Newcastle-upon-Tyne.** Department of Child Health, Children's Clinic, Royal Victoria Infirmary, Newcastle-upon-Tyne NE1 4LP. Tel: 0632-325131.

**International Leprosy Association.** 16 Bridgefield Road, Sutton, Surrey SM1 2DG. Tel: 01-642 1656.

**The Leonard Cheshire Foundation International.** 26-29 Maunsell Street, London SW1P 2QN. Tel: 01-828 1822.

**The Leprosy Mission.** 50 Portland Place, London W1N 3DG. Tel: 01-637 2611.

**Liverpool School of Tropical Medicine.** Department of International Community Health, Pembroke Place, Liverpool L3 5QA. Tel: 051-708 9393.

**Oxfam.** 274 Banbury Road, Oxford OX2 7DZ. Tel: 0865-56777.

**Rehabilitation International.** 432 Park Avenue South, New York, N.Y. 10016, U.S.A.

**Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine.** Keppel Street (Gower Street), London WC1 7HT. Tel: 01-636 8636. Evaluation and Planning Centre for Health Care. Tel: 01-631 3216. Refugee Health Group. Tel: 01-631 3216.

**The Royal Association for Disability and Rehabilitation.** 25 Mortimer Street, London W1N 8AB. Tel: 01-637 5400.

**Royal Commonwealth Society for the Blind.** Commonwealth House, Haywards Heath, West Sussex RH16 3AZ. Tel: 0444-412424.

**Save the Children Fund (UK).** Mary Datchelor House, 17 Grove Lane, Camberwell, London SE5 8RD. Tel: 01-703 5400.

**Social Audit Ltd.** P.O. Box 111, London NW1 8XG. Tel: 01-586 7771.

**Tropical Child Health Unit.** Institute of Child Health, 30 Guilford Street, London WC1N 1EH. Tel: 01-242 9789.

**UK Committee for UNICEF (United Nations Children's Fund).** 55 Lincoln's Inn Fields, London WC2A 3NB. Tel: 01-405 5592.

**War on Want.** 467 Caledonian Road, London N7 9BE. Tel: 01-609 0211.



## **AHRTAG**

The Appropriate Health Resources and Technologies Action Group is a charity concerned with developing and promoting equipment and techniques for health care at community level in developing countries. AHRTAG, which grew out of the rural health panel of the Intermediate Technology Development Group, was set up in 1977 and is a WHO collaborating centre.

Project areas include:

- \*Disability prevention and rehabilitation
- \*Diarrhoeal diseases
- \*Dental Health

Publications concerned with rehabilitation in the Third World include: —

- “Low Cost Aids”
- “Therapy Aids”
- “Playing Together”

These show in pictures how to make a wide range of aids for disabled children. The aids are designed by Don Caston with drawings by Joan Thompson.

Also in this subject area is an illustrated publication entitled “How to Make Hand Grips”.

*For further information and full publications list write to: —*

**AHRTAG**  
**85 Marylebone High Street**  
**London W1M 3DE**  
*Telephone: 01-486 4175*

# A Cry for Health

## Poverty and Disability in the Third World

This book brings together the fields of disability and development which until recently have been considered as separate subject areas.

Disability in the Third World is caused mainly by lack of adequate food and the absence of clean water, sanitation and basic health care facilities. Hence measures for the rehabilitation of disabled people and the prevention of further disability are not peripheral concerns but central to the process of economic and social development.

Some 340 million people in the Third World suffer from disabling conditions and diseases. This tragic situation is largely preventable. In this book leading experts consider what can be done. From different viewpoints they raise the same fundamental question: if disability is preventable why is it not being prevented?

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Diarrhoea and Oral Rehydration Therapy.	Denise Ayres—The Appropriate Health Resources and Technologies Action Group.
The Need for an Integrated Control Programme for Diarrhoeal Disease.	Richard Feachem—The London School of Hygiene and Tropical Medicine.
The Prevention of Polio.	Nicholas Ward—The Save the Children Fund.
Leprosy and the Prevention of Deformities.	Stanley Browne—The International Leprosy Association.
Resources for Health Care.	David Morley—London University, Institute of Child Health.
Self Reliance Through Appropriate Technology.	Christine Hogg—The Appropriate Health Resources and Technologies Action Group.
The Role of Children in Health Care.	Duncan Guthrie—The CHILD-to-child Programme.
Overcoming Disability Where There is No Doctor.	David Werner—The Hesperian Foundation and Project Piactla, Mexico.
Rehabilitation Within Child Care.	Sophie Levitt—London University, Institute of Child Health.
Rehabilitation: The Need for a Realistic Approach.	George Wilson—The Association for Disability and Rehabilitation.
Agriculture for the Blind in Ghana.	Alan Johns—The Royal Commonwealth Society for the Blind.
The Disabled Consumer: How Multinational Corporations Affect the Third World.	Charles Medawar—Social Audit Ltd.
World Disability: The Need for a New Approach.	Norman Acton—Rehabilitation International.
The Charter for the 1980s.	Alfred Morris—Shadow Minister for the Disabled.
Further Reading/Useful Addresses.	